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ABSTRACT

Eighteen essays are presented by participants at a regional seminar on the training of educational research personnel. Following an introduction which discusses trends and problems in the educational leadership of Asian countries, material is divided into five sections. Section 1, advancing the professionalism of teachers, contains three articles covering educational research in Japan, alternative training methods, and new developments in university training for research. Section 2 examines the contributions of universities to educational research and includes case studies of the Philippines, Bangladesh, Pakistan, India, and Nepal. Section 3 focuses on the task of coordinating educational research efforts. Three articles discuss educational research in China, the training of researchers in behavioral sciences, and identifying national education infrastructures. The 5 articles in section 4 examine the relationship between administrative style and research training as seen in Thailand, Vietnam, Malaysia, the North Solomon Islands, and Indonesia. In the final section, two articles identify prospects for international collaboration. (LP)

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SCANNING THE NEW HORIZONS

Essays on the preparation of educational research personnel in Asia and the Pacific

Edited by
John E. Watson

SE 015 079

Section for Educational Co-operation in Asia
National Institute for Educational Research (NIER)
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FOREWORD

The importance of educational research for the qualitative improvement of education is widely recognized today, and the need to enhance the research capability of individual countries in the Asian and Pacific region is strongly felt. With a view to contributing to the training of educational research workers as a means to strengthen educational research activities in each member state participating in the Asian Programme of Educational Innovation for Development (APEID), a Regional Seminar for the Training of Young Educational Researchers was held in October-November 1981 as one of the series of the seminars on educational research organized by the National Institute for Educational Research (NIER) since 1979 under the Unesco/APEID-NIER regional programme. A report of the Seminar, entitled "Educational Research and Training in Asia and the Pacific", was published in December 1981 by NIER. The background of this Seminar is fully described at the introduction of this book by Mr. John E. Watson, the Rapporteur-General of the Seminar and the editor of this book.

During the Seminar, individual reports were presented by the participants, which illustrated features and problems in each country in relation to educational research and training of educational researchers. The individual papers were so informative and it was considered to be worthwhile to publish these papers separately from the seminar report. It was suggested that the book will be quite unique not only because it provides a picture of overall situation of the training of educational researchers in the Asian and Pacific region but also it offers some of practical suggestions how to develop the training programmes for educational researchers. When the participants were agreed to publish their papers in a single volume, Mr. John E. Watson, the Rapporteur-General of the Seminar, volunteered kindly to edit the papers.

In the course of the editorial work, it was decided that all of the individual reports written by the participants of the Seminar which had focused on training of educational researchers were included in this book, while the papers presented by two resource persons which had examined the other aspect of educational research were excluded from this volume.

It was a long hard-working process for Mr. Watson to edit this book in addition to the heavy responsibility at his own organization. It was the same with individual writers who have reviewed and revised the original papers during their precious spare times at home. Without John's initiative and cooperative efforts of every participant it was not possible to publish this volume.

I am very happy as Director General of NIER that the individual papers were edited and finally published in this form. I would like to express my deep appreciation to all the writers for their contributions. I am particularly grateful to Mr. John E. Watson for his special work done for the editing and finalizing of this publication.

It is my sincere hope that this publication will help people concerned grasp the ideas to improve present state of art in relation to the educational research and training programmes of young educational researchers in their own countries.

Hiorshi Kida
Director General
National Institute For Education Research, Japan

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INTRODUCTION

The origins of this book are very simple. In 1981, following upon a request from Unesco, the National Institute for Educational Research (NIER) in Japan agreed to host a regional seminar in Tokyo on the training of young educational researchers. The occasion thus became a joint activity within the framework of an agreement between NIER and the Unesco Regional Office for Education in Asia and the Pacific (Bangkok), acting through its Asian Centre of Educational Innovation for Development (ACEID). These initiatives were also supported by the Japanese National Commission for Unesco, and the Ministry of Education, Science and Culture in Japan. The objectives of the seminar were:

(1) To review the state of educational research and practice and to exchange information and experiences on the types and content of training for researchers in terms of infrastructures, programmes and methodologies.

(2) To develop a training manual or guidelines for educational researchers, particularly young researchers.

A synopsis of the collective views of the seminar on the second of these objectives has already been published under the title, *Educational Research and Training in Asia and the Pacific*, NIER, Tokyo 1981. The larger book now offered here is presented as a public record of the review required for the first objective.

The essays brought together in this book originated from commentaries presented by 18 of the participants on developments in their 14 respective countries. But it would be unreasonable to expect these accounts to provide a compendious and deftly-constructed review of educational research in all the countries of such a complex geopolitical region. We counsel modest expectations for two main reasons. First, the countries represented at the seminar are extraordinarily diverse in size, historical tradition, economic resources, and in their experience, over the centuries, with nations outside the region. They included the world's most populous nations, as well as some of the smallest occupying distant islands of the Pacific, countries of ancient and unifying traditions, others with a diversity of peoples scarcely touched yet by the rush to modernity. Faced with all these variations in history and circumstances, it would not have been surprising if the seminar had concluded that training requirements are so different as to preclude cooperation in formulating common objectives. As it turned out, members of the seminar were agreeably surprised to find that the common drive toward national development had highlighted opportunities to share much common experience.

Secondly, the essays assembled here are no more than the separate essays of men and women of different experience, differing interpretations of what the occasion called for, and differing styles of presentation. Each has provided a strong,

interesting and personal statement, revealing the author as well as the standpoint from which he or she has spoken. But as the prospects for publication were problematical when these contributions were first requested, no editorial pre-conditions had been set out in advance. The authors have been free, therefore, to exercise their personal and national styles; some contributed out of a lengthy background of international and research experience, others were attending their first international meeting. In the editorial shaping of this book no effort has been made to iron out these varying styles, or to ensure that every essay is decked out with identical scholarly conventions, footnotes, bibliographies and so on. In the spirit of our times, we have welcomed diversity.

The distinctiveness of each essay in no way prevents the collection, as a whole, from bringing into focus issues of common concern to those in this part of the world who are seeking to prepare a new generation of educational researchers. It is very clear, for instance, that all authors accept that the training and induction envisaged will occur mainly within their own countries, or at least within the Asian region. Each author, indeed, reflects the growing spirit of national self-consciousness that is now evident among contemporary planners in Asia and the Pacific.

Shadows of the Past

In assessing the timeliness of this publication, one must appreciate, in the first place, the changes in the nature of the cooperation that has been occurring among educational scholars and teachers in the Asian and Pacific region. A quarter of a century has already passed since the late Professor Masunori Hiratsuka of Kyushu University (and subsequently, a director-general of NIER) first discussed with Unesco officials in Paris a proposal for an international conference in Asia on educational research. The idea had been mooted initially in 1956 at the Japan Society for the Study of Education, and, as a result of the representations of Dr Hiratsuka in Paris, plans were made for a conference in Tokyo in September 1959. The invitations to 123 leading educational scholars in 55 countries were sent out in April 1958. Just as promptly, the conference was singled out as a special contribution to the 10-year major project for promoting the 'Mutual Appreciation of Eastern and Western Cultural Values' authorized by the General Conference of Unesco at its 9th Session in New Delhi in 1956. The early initiative of the Japan Society for the Study of Education was thus reinforced by the cooperation it was subsequently offered by the Japanese National Commission for Unesco, the Science Council for Japan and the Ministry of Education, Science and Culture in Japan.

The proceedings of this first international conference (published as two volumes in English) now provide an instructive benchmark for those interested in the progress of educational research in Asia in the past 25 years.[1] In essence, this first conference was an assembly of university scholars. The principal participants

were 17 visitors from abroad (6 from Europe, 7 from North America, and 4 from Asian countries) and 75 Japanese scholars from 38 of the country's leading universities. The papers presented were varied and interesting, 16 on the status of educational research in 13 countries, 12 on issues in comparative education, 18 on relationships between education and industry, and 19 (in a supplementary volume) on educational developments in Japan. In addition to the principal participants, the conference was also attended by 20 members of the Comparative Education Society of the USA, and 330 members of the Japan Society for the Study of Education. Given such an impetus, it is hardly surprising that one of the concluding resolutions proposed that a secretariat be established in Tokyo to create a permanent international association for the advancement of educational research. But the association did not survive from an undernourished infancy.

Still, as in other parts of the world, the decade of the 1960s saw a rapid advance in educational research in Asia, as governments, international agencies, economic advisers and educational planners came to appreciate the role of research and innovation in promoting wider objectives for personal and national growth. In nearly every country, an infrastructure of relatively autonomous national research centres, together with university units, and departments or research divisions in ministries of education, was gradually established. Beyond this, at the regional level, and usually promoted by a multi-national agency, a series of specialized regional institutes came into being to advance research and development on particular topics, such as curricula reform, school buildings and administrative change. Within ten years the Third Regional Conference of Ministers of Education, meeting in Singapore in 1971 had declared that "the renovation of education cannot take place without extensive and systematic research on all aspects of education".[2] This growing interest of governments in national policies for promoting educational research soon began to influence, too, the purposes of international collaboration in education.

Asian Leadership in Creating Innovative Networks

Across the world in the past two decades, it has become common practice for international institutions or groups to make global reviews of the state of research in agriculture, population, and branches of science and technology. Their work has been made more effective by the collaboration that already existed between scientists in each discipline within particular regions. The countries of Asia have

1. *Proceedings of the Conference on Educational Research*, organized by the Japan Society for the Study of Education, plus a supplementary volume, *Present Status of Educational Research in Japan*, Tokyo, 1961.
2. See *Development of Education in Asia*, Unesco, Paris, 1971.

been drawn into these research networks, and their scientists have gained much from the experience. Intellectual contacts have been built up across the boundaries of geography, scientific disciplines and political ideologies. Policies for and methods of research have inevitably been modified by this widening of contacts between scientists with different backgrounds.

In educational research the Asian region has been to the forefront indeed, in broadening such connections mainly as a result of the unique relationship that has evolved between Unesco and the National Institute for Educational Research in Japan. In 1965, the Director-General of Unesco, M. René Maheu, on a visit to Japan, invited NIER to join Unesco in setting up a regional programme for promoting educational research in Asia. In response to this invitation, NIER established a special section within its External Service Department, and an orderly pattern of development quickly followed. In an initial phase from 1967 to 1974, NIER hosted 22 conferences, workshops or seminars to foster joint planning and collaboration. It is evident now that many of the participants in those meetings have since become influential educational leaders in Asian countries.

The most common topics for debate and clarification at meetings during this phase were either curriculum development for primary and secondary schools that would implement national objectives, or help with the preparation of instructional aids and materials appropriate to these purposes. The 400 or more educational leaders from about 15 Asian countries who shared in this experience thus became an advance guard for consistent collaboration. With their cooperation a model was worked out for promoting regional cooperation through a national research institute.

Moreover, through the efforts of Unesco and other UN agencies, these meetings also contributed significantly to a concept of educational planning characterized by a close linking of research and development. Consequently, as increasing numbers of Asian nations stepped up their investment in educational research or development, they came to share an interest in improving research planning within the region. In recognition of these mutual interests, NIER took the initiative, in 1972, by calling together a regional meeting of experts on research from 14 nations and Unesco's regional institutes.

The main purpose of this meeting was first, to review the status of educational research in Asia and, secondly in terms of the crucial common needs of the region, to identify and formulate new research or development projects that might be undertaken in a spirit of regional cooperation. The modest report on its proceedings therefore represents a milestone in the history of educational research in Asia.[3] In addition, it suggests that the Unesco-NIER 'Regional Programme for

3. *Educational Research and Development in Asia. Report of a Regional Meeting of Experts*, Unesco Bangkok/NIER Tokyo, 1973.

Educational Research in Asia' had turned out to be a forerunner for Unesco's new Asian Programme of Educational Innovation for Development (APEID), endorsed by the 17th Session of Unesco's General Conference in Paris in 1972.

On the recommendation of the Third Conference of the Ministers of Education in 1971, Unesco had started to make preparations in 1973 for a new programme of regional cooperation. This was launched in 1975; it was followed, a few years later, by comparable programmes in Southeast Europe, Africa, the Arab States and the Caribbean. The idea of a networking approach had been influenced by a deepening appreciation of the many-sided nature of national development and of the varied tasks of educational innovation in relation to it. Essentially, it accepted development as a process that involves a diversity of paths and goals which reflect the differing sets of values peculiar to each society. During the early 1970s the popularity of this view reinforced a growing feeling among educational reformers of the region that we still have much to learn about the relationship between the expansion of education and the social, economic and cultural development of each nation.

Within the broader APEID programme however, the primary impetus for advancing educational research has continued to come from the generous assistance of the National Institute for Educational Research in Japan. In cooperating with the new programme since 1975, the Institute has acted as the host for 32 seminars or workshops. Half of these, it might be noted, have concentrated on two sequences of task forces or workshops: one series concentrated on the educational implications of each Asian nation's moral values, attitudes and religions,[4] and the other on the development of a scientific outlook through the use of suitable low-cost teaching aids.[5] A comparable series of workshops and seminars was also followed in dealing with work-oriented education, advanced level technology and practices in preparing teachers. Clearly the main aim of these workshops was not to advance research skills, competence or ingenuity in any direct sense. But in maintaining the continuity of planning required to foster a regional spirit of innovation, the specialist staffs of ACEID in Bangkok, and NIER in Tokyo, have become "information brokers" of exceptional importance. From the outset, it was accepted that collaboration could be promoted most efficiently by mobilizing the capabilities for cooperation of a network of national institutions (that is, 'associated centres'), which have already shown considerable strength in their own countries.

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4. The outcomes of the Unesco-NIER Joint Study of Moral Education in Asian countries are available in several publications (e. g. *Moral Education in Asia*. Tokyo, 1980). All together the task required 5 workshops, 1 high level seminar, and 1 task force meeting over the years 1975-1980.

5. Note: The sharing of experience on low-cost science materials alone has required 4 workshops from 1979 to 1981. See, *Low Cost Aids for Elementary Science Teaching in Asia and the Pacific*, NIER, Tokyo, 1982.

In complementing such workshop activities at NIER, the Asian Centre of Educational Innovation for Development (ACEID) has also made a useful start in strengthening documentation and publication services from Unesco's Bangkok Office. Similar efforts to stimulate communication and interaction among educational development specialists in the region have been advanced by the South-east Asian Ministers of Education Organization (SEAMEO) which has sponsored a family of regional organizations on such diverse themes as language (RELC), educational innovation (INNOTECH), science and mathematics education (RECSAM), agricultural education (SEARCA), and other bodies such as a regional institute of higher education and development (RIHED).

These organizations all include elements of research in their programmes but for the most part, development heavily out-weighs research in their work. Hence they are likely to do more to provide interaction among practitioners and policy-makers than among researchers. In addition, since they are usually agencies of the ministries of education, their view of education may be more pragmatic and somewhat foreshortened in perspective. From time to time, cooperation among these centres is supplemented by such exercises as the review of the national education assessment studies that were undertaken independently, between 1972 and 1975, in Indonesia, Malaysia, the Philippines and Thailand, and by the review of research on teacher effectiveness in the same countries. The latter have been sponsored by the International Development Research Centre (IDRC) and financed by the Canadian government.[6] In short, these illustrations may be sufficient to suggest that the contexts and the pressing concerns for informed debate and collaboration have been transformed in Asia in the 20 years from the 1950s. A concern for a strengthening of research capabilities has also steadily become more widespread.

Recognizing Broader Horizons

By the end of the 1970s every country was finding it necessary to reappraise educational research and the reviews proposed for the Asian region have therefore had much in common with those in other parts of the world.

First, within the framework of Unesco, a series of global reviews set out to clarify priorities for educational policies in the 1980s. These were quickly reflected in the resolutions of the General Conference of Unesco, in Belgrade, in 1980, which

6. Suzanne Mowat, *The Genesis, Conduct and Utilization of Education Research*, Ottawa, The Research Review and Advisory Group, IDRC, 1978. (See summary in *Prospects*, Unesco, Vol. XI, No. 3, 1981); B. Avalos and W. Hoddard, 'A review of teacher effectiveness research in Africa, India, Latin America, Middle East, Malaysia, Philippines and Thailand: A Synthesis of Results' IDRC-MRIO, Ottawa, 1979, 166pp.

shaped the purposes of the Medium Term Plan for 1984-89, in the related developmental objectives adopted for the third cycle of the 'Asian Programme of Educational Innovation for Development', and in other Unesco conferences such as the international colloquium on 'Research and Practice in Education' held at the European Centre for Higher Education in Bucharest (Roumania) in November 1980.

Secondly, a similar series of regional resolutions were formulated at several meetings in Asia, most notably at the Fourth Regional Conference of Ministers of Education and Those Responsible for Economic Planning in Asia and Oceania held in Colombo, in 1978. One of the recommendations made at that Conference, for instance, and addressed to the Member States of the region, invited them to 'intensify research and efforts aimed at creating educational systems that were truly national in their working principles, structures, contents and educational method···' (Recommendation 12).[7]

Thirdly, a comparable set of consultations and reappraisals in other regional contexts has been initiated by the Bellagio Group, meeting in Berlin, Rome, Ottawa and other places, and by regional seminars such as *Seminario* '80: *Educational Research in Latin America—Situation and Prospects* (Santiago, 1980). As a contribution to these reappraisals a small literature has evolved reviewing networks for promoting and utilizing research, patterns of cooperation and other 'brokering' activities. In large measure, this information is an outcome of the work of organizations like Unesco's International Bureau of Education in Geneva, and the Educational Research Review and Advisory Group of the International Development Research Centre with headquarters in Ottawa.

Fourthly, and as a result of these developments, an increasing number of 'state-of-the-art' reviews of research on particular topics (class size, teacher effectiveness, educational finance) have been commissioned by the World Bank, IDRC and similar organizations. Such documentary services may now help various international colloquia to examine critically, and in sharper-detail, the range and aptness of research being undertaken and to compare the achievements of various regions, South America, the Caribbean, Africa and so on.

Against this background and given the long history of its cooperation, it is not surprising that the National Institute for Educational Research of Japan should therefore again be invited by Unesco, in 1978, to sponsor a review of the status of research in the region and its functions in preparing for and implementing educational reform in Asian countries. As the research directors of several of these

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7. Note: In the present context, it should be noted that a Regional Seminar on Educational Research in Relation to Educational Reform in Asia and Oceania, held at NIER, Tokyo in May-June 1979 was the first of a set of seminars taking up this recommendation. The Regional Seminar on Educational Research and Training in Asia and the Pacific in October-November 1981 was the second. The third seminar on this theme has been scheduled for November 1982.

countries were already familiar with similar reappraisals in other places, it seemed likely that such a review would be considered timely. It might have been assumed too, that a broad measure of agreement would exist on the redirections required, or on the common problems in changing directions, or on the inadequacies, such as the provisions being made for the training of educational research personnel. Even so, those who contributed essays to this book have been very gratified to discover that the consensus among them on these matters has proved to be stronger than many had at first expected.

As the essays will show, the authors are alert to the contemporary emphasis on research that contributes to the quality of learning and teaching, and clarifies practical problem of concern to teachers, administrators or others concerned with qualitative improvements in education. There is also common agreement that classroom teachers should now be encouraged to become partners in the whole enterprise. These emphases, in turn, have touched off a growing interest in research methodologies, in the professional development of research staffs and in the use of multi-disciplinary teams. National purposes, traditions and ideals that have found expression in schools are now more clearly seen as having significant implications for the research that is to be taken up and how it will be conducted. The common problems, it is agreed, lie in the procedures used to clarify priorities, in the training of reserach personnel, in the provision of adequate facilities, in the development of effective means for communicating fresh knowledge to the teaching profession, and in utilizing the findings of soundly-based research.[8]

Inadequacies to be Overcome

It has long been recognized that the growth of educational research and development in Asia has been handicapped by the lack of trained personnel, and by the absence of adequate training opportunities in most countries.[9] But the Unesco -NIER Seminar in Tokyo from which this book has arisen, is one of the few concerted efforts, so far, to address these problems directly in a spirit of regional cooperation. In all countries of the region, universities continue to have a major role in providing training for prospective educational researchers. This book therefore includes several essays which outline, in various ways, the scope and detail of such courses. It also draws attention to newer provisions for training now being set up by countries as diverse as Japan, Thailand and Papua New Guinea. In several countries, the provisions made by universities for pre-service training in research

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8. For a full treatment of the views summarized here, readers are referred to *Educational Research and Training in Asia and the Pacific: Report of a Regional Seminar*, NIER, Tokyo, 1981.
9. *Educational Research and Developement in Asia, Report of a Regional Meeting of Experts*, Unesco Bangkok/NIER Tokyo, 1973, Annex 4, Table 3, p. 64.

methodology have been supplemented in recent years by opportunities for young researchers to be recruited into project teams working on major issues of national planning. Frequently, these investigations have been financed and assisted by international agencies, foreign governments or philanthropic foundations. While such opportunities are welcomed, there is common agreement that they are often narrowing, because the services of young researchers are usually confined to a small part of the total project. It is also widely appreciated that the leading members of the contemporary research workforce in many countries have benefitted, in their early years from post-graduate training abroad, usually outside the Asia and Pacific region. But such opportunities are normally available only to a very small group from each country.

Broadly, the consensus reached by the 1981 Tokyo Seminar on the inadequacies of the research workforce presently available in Asia and the Pacific, has been summarized[10] as follows:

(1) That there is an inadequate appreciation of the place of statistical and quantitative procedures, resulting from insufficient grounding in the conceptual aspects of educational research. It was agreed that this commonly leads to serious misconceptions, an undue emphasis on quantitative information, considerable confusion about the nature of valid and reliable data, and a lack of confidence and flexibility in using computer facilities or other aids to skilled analysis.

(2) That young researchers have often had insufficient experience in practical research operations to develop versatility in deciding the kind of research appropriate to a given problem. This means that they may lack ingenuity in proposing or developing manageable experimental or research designs, and demonstrate too little curiosity about the merits of alternative methods for assembling and analyzing data.

(3) That there has been too little recognition of the different levels of competency demanded in educational research: in staffing research teams or investigations; at different stages in the careers of professional personnel; and in the various sectors of the over-all research structure in a modern education system.

Throughout the Seminar however, as the essays will confirm, it was clear that noteworthy efforts had already been made to up-grade the competencies of the research workforce in most countries. It is the experience of such programmes, indeed—covering things as diverse as acadmic exchanges, inservice training, public recognition, kit-set and packaged materials, and distinctive staff development practices—that has created a promising base for good cooperation. The Seminar reached agreement very quickly on the attitudes, skills and qualities they expect to find in an alert and well-trained body of educational researchers. Its members were

10. See *Educational Reseacrh and Training in Asia and the Pacific*, NIER, 1981, p. 17.

equally united on the attitudes of mind they would like teachers to bring to their daily work in order to inspire a questing spirit in their students and in the communities they serve.

It is hoped that the publication of this collection of essays will now stimulate more discussion and much more sharing of experience on the training of a new generation of researchers for Asian and Pacific countries. The countries represented have had very different histories. In some countries (for example, Japan) research scholars have helped to shape teaching practices and objectives for more than a century, whereas, in other places, the use of research as a stimulus to change is an innovation of only the last decade. There is, indeed, much scope for debate on the styles and practices of research that are appropriate at different stages in each nation's history.

As a contribution to that debate, the editing of these papers has been a rewarding task. The tolerance, kindness, and command of the English language shown by its authors has left a deep impression on me for it has been their energy, and unselfishness which has made the book possible. My reward is in their continuing friendship.

1 November 1982

John E. Watson
Director
New Zealand Council for Educational Research

Section One

ADVANCING THE PROFESSIONALISM OF TEACHERS

EDUCATIONAL RESEARCH IN AN EXPANSIVE SPIRIT
—The Case of Japan—

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Director General
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Introduction

An examination of research programmes currently being undertaken is urgently needed in order to identify ways of promoting educational research at large, but more particularly to establish closer links between research and practice in education. Current research programmes may be examined from several angles, but only two standpoints will be taken here, one the areas covered, and the other the researchers involved. Obviously, there are other ways of reviewing educational research, its methodology, the utilization of research outcomes, the utility of research and so forth. But for the purpose of this paper it will be sufficient to limit the perspective to the two angles already mentioned.

Priorities in Educational Research Areas

In November 1981, the International Bureau of Education (IBE) will organize its 38th session of an International Conference on Education and the IBE Secretariat has prepared a working document on the state of educational research in participating countries, based on the questionnaire completed by its Member States. The document categorizes themes of educational research into three types in terms of priorities afforded to the themes in participating countries: firstly, the type of research themes to which top priorities are being given in Member States; secondly, the themes which seem destined to receive priority in the future; and finally the research fields to which less priority is currently given.

The first group of research themes testifies abundantly to the new and increasingly widespread attention being paid to social integration, and to knowledge, in establishing an equality in education opportunity, the extension of primary and secondary education, the qualitative improvement of education, the study of scholastic failure. In addition, there is much emphasis on research into the social and cultural issues involved in education for the underprivileged, minority education and special education. The IBE working document also identifies the high priorities attributed to research on the transition process from one stage of education to another and links between education and work. Interestingly, research

on teaching didactics in various subject areas is also given top priority in many countries, with special emphasis on the art of teaching in regard to basic knowledge that is accompanied by research on evaluation and learning motivation.

The second group of research themes in the order of priorities prepared by the IBE staff, includes research on curriculum design and curriculum development in response to the needs of particular countries, research on links between training and employment, research on educational planning, and so on. It is interesting to observe that, while the art of teaching basic knowledge is given top priority in many countries, research on curriculum design and curriculum development is ranked second in the overall priority order.

Fields of research in which little development is currently reported include, among others, those concerning the teacher-pupil relationships and the teaching process. From an overview of the IBE working document in regard to the educational research priorities in respective countries, it may be said that more emphasis is likely to be given currently to the areas which clarify educational issues in relation to the social conditions and social needs. This does not necessarily mean of course, that less emphasis is being given in teaching-learning processes as a whole, but it is worth noting that a set of areas related in day-to-day practice in classroom activities is divided into three different priority groups.

These observations on the current concerns of research are based on the working paper IBE has prepared for its International Conference on Education; another set of observations is to be made on the machinery for and personnel engaged in educational research. To expand this perspective, three examples may be taken from the experiences of Japan, that is, its historical experience in educational research, its machinery for educational research and the personnel involved, and finally its experience in postwar curriculum development and research.

Historical Experiences of Educational Research

The characteristics of educational research in prewar Japan (1868-1945) may be summed up in the following way: first, a positive introduction and adoption of the western educational research and practices; secondly, the promotion of practice-oriented research programmes parallel with the above; thirdly, the vital role played by the national government in linking educational research and practice.

Beginning in the 1870s, the Ministry of Education in Japan set out quite deliberately to collect information on education in the European countries and the United States and it sent many young researchers to these countries to examine developments. During the early stages of the Meiji era, new education practices such as a monitorial system in UK and USA, the object teaching method as an innovation in instruction, and progressive educational thoughts of H. Spencer, T.H.

Huxley and others, were introduced quite positively. Many of foreign educational documents were also translated into and published in Japanese, and educational information on other countries was introduced through journals.

The outcomes of educational research and practice, mainly from UK and USA, were disseminated among educationists through the normal schools which the Ministry of Education had established in each prefecture for the expansion of education. The elementary schools attached to these normal schools were considered 'a model elementary school in the area'. It is worth noting then that new practices tried out in those attached elementary schools spread to other elementary schools in the neighbouring area.

Within twenty years, by the 1890s, elementary schools had been established throughout the country, and the number of pupils enrolled had increased. These developments in turn, required more systematic and effective ways of teaching. In place of influences from UK and USA, the teaching method of the Herbartian school, and its practices in Germany, attracted the attention of educational researchers seeking to achieve a more effective implementation of school education. In line with this, German pedagogy came to be actively studied at the imperial university and higher normal schools.

During this period too, in keeping with the study of foreign educational research and practice, practising school teachers began to organize voluntary study groups and seminars in order to find solutions to the problems they encountered in conducting teaching activities. The main fields of study taken up in these teachers' groups were on classroom instructional methods for the lower elementary grades and individualized instructional methods for the upper elementary grades. The findings of these studies were disseminated among local elementary schools under the guidance of local education administrative officials and by means of research publications.

From 1904, the enactment of the state-adopted textbook system played an essential part in homogenizing the quality of education of the country and naturally this influenced the undertakings of research and practice. The textbooks compiled and published by the national government were uniformly used in every school throughout the country as the sole teaching material. With the enforcement of this system, the practice-oriented research by school teachers tended to become confined only to the study of the effective utilization of given teaching materials. Ways of questioning and of writing on black-board, methods of communication and other practical teaching skills, were developed through studies made by classroom teachers.

But educational research in Japan also entered into a new era with the beginning of the twentieth century. In place of German methods of teaching, educational thoughts and research of J. Dewey, E. Key and others were introduced. In contrast with the teaching methods stressing 'inculcation' during the Meiji era, educationists now began to pay more attention to instructional methods which

would enable children to learn by themselves.

By then, Japan had more than fifty years of experience with modern systems of school education. Educational improvements began to be initiated therefore not only on the basis of the influence of new thoughts and practices from abroad but also on the basis of traditional ways of thinking. Subsequently, instead of the western method of learning by debates, unique education methods such as the use of a composition on life experience (since the composition was regarded useful for better self-recognition) were developed and disseminated.

In the longer perspective from the Meiji period to the Second World War, it may be observed that educational research in Japan began with the direct transplantation of foreign research and practice and then gradually proceeded to the undertaking of educational research based on Japanese traditions and values. At the same time, the magnitude of research projects and practices was gradually shifted from small-scale to large-scale undertakings, namely, from community-centred or individually-initiated studies to nation-wide investigations.

Machinery for and Personnel Engaged in Educational Research

In Japan, educational research projects are conducted in various forms by educational researchers, scholars, elementary and secondary school teachers, and others. Generally these projects may be categorized into the following three patterns: first, the educational research pursued by teachers themselves who are actual practitioners of elementary and secondary school education; second, the practice-oriented educational research carried out by full-time educational researchers. The educational research and surveys implemented by central and local governments and researches made by institutions for in-service training of teachers should also be included in this grouping. Thirdly, there is the basic and theoretical educational research undertaken by the university professors and researchers. But the most outstanding characteristic of the educational research in Japan is the first category of educational research outlined here. School activity-based educational research is widely, actively and systematically conducted by school teachers themselves.

Educational research of this type is rooted in the teacher's enthusiasm for fulfilling and developing their educational activities. This is concentrated mainly on subject-matter teaching, and is carried out on an individual school basis for the purpose of improving instructional methods under the leadership of school principal and senior teachers. In addition, a number of local voluntary study organizations of teachers have been formed which also contribute to the promotion of research activities. These teacher's organizations generally include subject specialists in a given area such as the teachers of Japanese language, or mathematics, or social studies, at the community and/or at prefectural level. There are now more than 500 such prefectural-level organizations throughout the country. Not a few teachers are

also members of the nation-wide educational research organizations that have been initiated mainly by scholars and professional researchers; these teachers may therefore conduct their research activities in collaboration with member scholars or researchers.

Elementary or secondary schools attached to teacher-training universities or education departments of general-type universities, and the experimental schools specially designated by the Ministry of Education, or local boards of education, conduct various educational research projects that are given special importance. Regional, as well as nation-wide educational research organizations, hold annual study meetings to provide their members with opportunities for presenting and discussing their research outcomes. But most research reports are published in journals.

In Japan, there is at least one national teacher-training university or department of education in national university, in each of 47 prefectures. Each of these teacher training universities or departments of education runs its own attached elementary/secondary schools so as to conduct experimental, or pilot educational practice or research. At present, in 1981, there are 71 attached elementary schools and 76 attached lower secondary schools. The role played by these attached schools in the promotion of curriculum research and development is quite vital.

In order to contribute to the improvement of teaching content and method the Ministry of Education and prefectural or municipal boards of education request a number of elementary and secondary schools every year to carry out, in addition, research on instructional methods for specified subject-matter teaching or educational programmes, for periods of one or two years. These schools are called 'designated study schools' and currently more than 800 schools have been identified for these purposes by the Ministry of Education. The Ministry of Education receives study reports from these schools which are then used for revision work on the courses of study, standards and so on for reviewing national curriculum.

The second category of educational research identified above is conducted by full-time educational researchers. There are now nearly 500 educational research institutions established by prefectural or municipal governments. These institutions are conducting, on the one hand, various practice-oriented research projects in association with local schools and classroom teachers, or organizing, on the other, inservice training courses for local teachers.

Many of these institutions were established during the postwar education reform period for the purpose of democratizing and rationalizing educational programmes. In 1948, a National Federation of Educational Research Institutes of Japan was formed as a national body to represent the interests of these institutions. This Federation has strengthened cooperative ties among member institutions and, at the same time, helped to facilitate various nation-wide joint research projects. The membership now reaches about 210.

The Federation also organizes an annual study assembly where 40 to 50 research reports are usually submitted. It also holds study meetings regularly for each joint research project. A variety of joint research projects have so far been initiated by the Federation such as, 'Improvement of Instructional Methods', 'Study of Moral Education', 'Education for Working Youths and Their Life Consciousness', 'Family and Children', 'Systematization of Education' and 'Basic Study on Scholastic Achievement and Career Selection'.

Besides these local institutions, there are the National Institute for Educational Research and the National Institute of Special Education. The former was established by the national government in 1949 when the postwar educational reform was in process. It aims at conducting practical and basic research on education with a view to promoting educational reforms on the basis of scientific educational research. The National Institute of Special Education was established in 1971 for the purpose of conducting necessary research for the promotion of special education and it has its own attached school for severely handicapped children.

Finally, the third category of educational research in Japan that was listed is the theoretical research conducted by university professors and professional researchers. Most of four-year national universities (about 90 in number) in Japan have educational departments or divisions, and the teaching staffs of these departments or divisions are usually engaged in theoretical as well as practical studies of education apart from their regular teaching. Some universities have also established research facilities such as an educational technology centre, or a science education study centre and a university education centre, in which research staff are conducting specialized research projects.

There are also more than 300 four-year private universities in Japan. Many of these also offer teacher training courses and conduct educational research programmes.

There are about 40 nation-wide academic educational associations. Each of them organizes study meetings once or several times a year and provides its members with opportunities to present the outcomes of their research projects. In recent years, an increasing number of these associations have been encouraged to undertake joint research projects among their members or to hold symposia on specific topics of education.

Experience in Postwar Curriculum Development and Research

To supplement this categorization of the personnel involved in educational research, it is important to trace back why the primary feature of educational research in Japan, that is the emphasis given to research projects undertaken by school teachers, has emerged. In a sense, the explanation becomes an historical review of educational research and practice in post-war period.

Education in the postwar Japan was strongly influenced by education in the United States and this was also the case in the field of educational research and curriculum development. The main focus of curriculum development in the years immediately after the war was upon the formulation of 'social studies' which attempted to integrate what was known as Shushin (civics), geography and history in pre-war period. Learning methods based on the concerns and interests of children were introduced and what are known as problem-solving methods were also widely adopted.

The research on these new emphases on education was carried out by professional researchers, university professors and experts in the Ministry of Education. These research projects were often undertaken however, without sufficient time being given to their proper preparation and implementation, and this may explain why it is now difficult to establish whether the outcomes of these researches were ever effectively transplanted into classroom practice. In any case, nation-wide surveys undertaken at this time by NIER found that the main concern of teachers was centered on methods of organizing child-centred learning activities and that they were giving less attention to the content of their instruction. Moreover, these survey reports pointed out that the basic scholastic levels achieved by children had dropped mainly, it was argued, because of integrated curriculum organization.

During the first half of the 1950s then, public criticism began to mount on the directions taken by new education, and a demand for more systematized learning of knowledge and skills gathered strength. The organization of study meetings at national, as well as regional levels became frequent and the curriculum specialists discussed the issues extensively. Voluntary educational associations also pointed out the necessity of systematic learning and the attainment of adequate scholastic standards. In response to and on the basis of these views and suggestions, the Ministry of Education promulgated a fresh set of curriculum standards.

In the sixties then, the attention of researchers became concentrated more on curriculum content rather than curriculum construction. As a result of this emphasis, it soon found that it was essential, for instance, to teach the rules of science systematically and sequentially, if the ultimate aim was to develop a learner's perception of nature and the society.

Along with the research by the full-time researchers, studies by classroom teachers soon became more evident and active during this period. Enthusiastic teachers tried to reveal the learning processes of children by means of keeping the records of classroom and other activities. Their studies were usually carried out with the participation of university professors and also the staffs of research agencies. The organized and planned research projects conducted jointly by the National Institute for Educational Research and local educational research institutions also contributed to the progress made in these investigations into instructional activities. As a result of these studies, and practices, teaching-learning

processes came to be understood much more scientifically, and new ideas on evaluation methods also emerged from this emphasis.

In the seventies, research on teaching-learning processes has been conducted continuously, and special emphasis has been put on the study of teaching-learning methods geared to individual abilities and aptitudes. In addition, much attention was then given to the study of audio-visual instruction, programmed instruction, and other forms of educational technology. At the same time, new pressures for curriculum change have been called for with the introduction of environmental education, education for international understanding, work-experience programmes, and so on, all of which require an interdisciplinary approach across traditional subject areas.

Concluding Remark — A Proposal

From these experience of educational research in Japan, and observations on major world-wide trends, I am persuaded to stress the importance of enhancing the research capabilities of classroom teachers. This is needed not only for the improvement of educational research, but also for the qualitative improvement of education that is needed so much in every country. It must be emphasized that the enthusiasm which teachers bring to their teaching duties, as well as to the improvement of education generally, is a fundamental condition for educational development in any place. We believe it is the searching mind of teachers seeking to improve their educational activities which has made educational research so active in Japan. To improve day-to-day instructional activities, teachers need to possess a deep knowledge of their craft and a capacity to analyse their day-to-day activities. This means that, to be successful, teachers require a capacity to undertake research projects themselves within their own teaching programme.

Clearly, to advance such objectives more broadly, international cooperation and the exchange of information among countries on educational research will need to be strengthened. And this is also an essential condition for expanding the research capabilities of individual countries. It may be suggested respectfully, that much more might be done to establish systems for promoting practical and classroom-oriented educational research as a basis for identifying the kinds of supervisory procedures and assistance needed for the improvement of school practices generally. To fulfill the professional aspirations of teachers, and to improve their contribution, it is important that the teachers' interest in and enthusiasm for research, be enhanced. Administrative measures that will accomplish such objectives are therefore of special concern to us. The question of how to enhance the research capability of classroom teachers will be a major topic for discussion in this seminar and I hope that my presentation will have been useful to some extent in advancing that theme.

ALTERNATIVE PATHS TO EXPERTISE

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Introduction

The term 'educational reseachers' in Japan is usaually used to identify those in the field of education who are engaged in research by profession or as a career. They conduct individual or joint researches in their own specialized fields in the institutes of higher learning or various institutions for educational research, and a graduate school system has been established for training individuals for such positions.

Educational researchers are not limited however, to professional reseachers working at institutes of higher learning or in various specialized institutions for educational research. Even among teachers at kindergartens, elementary, lower and upper secondary schools, and among administrators working in national and local educational agencies, there are many individuals in Japan who have acquired a high ability in educational research, who conduct educational research while engaged in teaching or administrative tasks, and who have achieved significantly in the understandings promoted by their research.

It is commonly agreed too, that educational research and practice, or actual instructional activities and educational administration should all have close inter-relationships. From this viewpoint then, the training of educational researchers is not simply a matter of preparing professional researchers to be employed in institutes of higher learning or specialized institutions for educational research, but a question of how we may improve the understanding of research held by teachers and educational administrators.

Hence, in this broader context, I should like to identify here some of the roles commonly accepted by educational researchers in Japan, and their training for these tasks, in order to clarify how we may improve the overall level of research achieved within the field of education.

Types of Educational Researchers and Their Training

Researcher with Graduate Training

Dr A. is 38 years old and presently an assistant professor at Tokyo Gakugei

University (a national university), teaching courses on the history of social studies, teaching methods and social studies, and the development of teaching materials for social studies. He was offered a position by this university three years ago. Before taking it he had been lecturing on methods of teaching in social studies in the education department of a local university.

Dr A. graduated from the Department of Education at the Tokyo University of Education (also a national university) at the age of 22. After being awarded with a first degree, he continued his studies on curriculum development for two years to complete a two year's master's programme. Then, from his master's programme he continued for another three years in a doctoral programme specializing in curriculum development on social studies. On completing the doctoral programme, he spent an additional year at the graduate school in Tokyo before finding a position as a lecturer at a local national university.

Dr A's case is a rather fortunate one, since he was able to make a satisfactory start in his professional career by finding a job as a lecturer within one or two years after completing a doctoral programme. For many of those completing graduate work it has become very difficult in Japan to find a job in institutes of higher learning, or in educational research institutes, which will provide scope for them to become fully fledged educational researchers. We already have a problem of unemployment in Japan among those holding doctoral degrees.

Later, Dr A. was promoted to a position as an assistant professor in the local university, and during his second year as an assistant professor he moved to his present position in Tokyo. The distinctive feature of his case is that he has received his basic training in educational research through his studies at a graduate school, and subsequently developed his career as a professional educational researcher through the research activities he has conducted at the university as a lecturer and as an assistant professor.

The course Dr A. has taken is the most typical and normal one in Japan and it may be called the 'academic researcher's course'. It does not mean however, that individuals like Dr A. have not been engaged in practical research enquiries. When he was teaching at a local national university, Dr A. kept in close contact with the Society for the Study of Social Studies in that prefecture (most members of the Society are teachers of social studies at elementary and lower secondary schools) and through participation in the Society's activities he has done practical research exercises. In any case, when we talk about the training of educational researchers, we usually have in mind the type of training Dr A. has undertaken.

Researcher with Training at an Educational Research Institute

Mr B. is presently an assistant professor at Kanazawa University (a national university) specializing in teaching methods, and he is also engaged in research activities as a staff member of the Centre for Educational Technology attached to the university. He is now 48 years old and it has been two years since he was offered

a position as an assistant professor. Before taking his present position he had been engaged in various activities for ten years as a research worker in audio-visual education, educational technology, and teaching methods at a prefectural education centre.

While engaged on researches in his specialized field, and in teaching at the university, he also gives lectures and training, as a part-time instructor at the prefectural education centre, for the inservice training of teachers from elementary, lower and upper secondary schools. The education centre where he was formerly a full-time staff member, is a centre for inservice training as well as for research, but training takes precedence over research.

There are 47 prefectures in Japan, and at least one such centre has been set up in each prefecture (as well as specially designated cities, e.g. those with over one million population). A regional network of such centres not only promotes the exchange of information on research and training, but also provides a framework for joint projects and research activity to enhance the activities of each individual centre. Further, it may be noted that in Japan a National Federation of Educational Research Institutes (NFERI) acts not only as a coordinating body; it is presently promoting and conducting two joint research projects which will extend over a three-year period.

During his 10 years as a research worker at the prefectural educational research centre, Mr B. actively participated in research through joint projects and seminars organized by NFERI, and implemented research on the themes to which he was assigned in the NFERI project. The experience he gained in this period has contributed greatly to the development of his research competence. Moreover, he has extended his research independently and has reported his findings many times to nation-wide academic societies. In addition, he has been actively involved in the activities of study groups in the prefecture on educational technology, and audio-visual education, and he has participated in the management of such groups. Since he has become well-known for these achievements, he was subsequently offered a position as an assistant professor in the department of education at the national university of that prefecture. However, not everyone can become a research worker at a prefectural education centre as Mr B. did. Prior to his service at the centre, he had been a teacher for 10 years after graduating from university. At first he was interested in art education and had little to do with either educational technology or audio-visual education. His interest in research in both of these areas was stimulated by the fact that his school, under the leadership of its principal, had chosen these special fields as their research themes and later as a research project. For six or seven years, until the principal retired, the school conducted research on how to improve the effectiveness of its teaching through making use of audio-visual instructional materials and educational technology. Gradually, Mr B. came to play an active role in these research activities within his school and from this background he was offered his first research appointment at the prefectural

education centre.

Researcher with Training in Attached School

Mr C. is 40 years old and a teacher-consultant for a municipal board of education. Before taking this position, he taught for ten years at the Takamatsu elementary school attached to the Department of Education, Kagawa University, and in the school he led the study group on social studies. In the two years before he became a teacher-consultant he was also lecturing on teaching methods in social studies at the department of education at Kagawa University, while teaching at the elementary school. He continues to lecture at the university as a part-time lecturer, although his new position as a teacher-consultant keeps him extremely busy. Mr C. is another type of researcher with a high level of ability in educational research.

I do not intend to say that he must have a high ability in educational research only because he has a position as a part-time lecturer in the department of education. In the case of Mr C., while he was teaching at the attached elementary school, he had already published with his colleagues, a book on a course of study, he had reported his research work at the Society for the Study of Social Studies, and he had also published many of his papers in professional journals on education. Among the papers he had published, one on 'the factors for the formation of social consciousness among children', based upon his own experiences of teaching, had attracted much public attention. All this suggests that he was already a prominent educational researcher while still a teacher in an elementary school.

In each of the 47 prefectures in Japan, a department of education or a college of education has been established and in each of these departments or colleges, an attached school has been set up as an institution for practice teaching. Teachers at attached schools are therefore required to guide and advise would-be teachers in their practice teaching, and thus, compared to teachers at ordinary public schools, they need to commit themselves more to educational research on a day-to-day basis in order to acquire the knowledge and ability to help such students. In the recruitment of attached school teachers those who are actively engaged in educational research within a prefecture are usually given preference.

Furthermore, attached schools regularly hold seminars, (once a year or once in two years) which are primarily demonstration lessons, based upon a theme selected according to the up-to-date issues raised in the field of education. Since attached schools as compared to other public schools, have an advantage of receiving guidance from university professors, the seminars they organize attract attention of teachers from all over the prefecture. For all these reasons teachers of attached schools tend to be actively engaged in educational research.

In the case of Kagawa prefecture, there are two schools attached to the department of education in Kagawa University and teachers from these schools, as a rule, accept a leadership role in the management of prefecture-wide societies of teachers. During the ten years he spent in the attached school, Mr C. was often

engaged in the programming and implementation of various research activities of the Society for the Study of Social Studies for elementary school teachers of Kagawa prefecture.

These experiences have contributed a great deal to Mr C's career development as an educational researcher. Similarly, there are many other people in Japan who have trained themselves like Mr C., to become professional educational researchers through research experiences at attached schools.

Researcher with Training at Designated School for Study

In introducing Mr B. in the preceding section and outlining how he had developed his ability in educational research at the educational research institute, I mentioned that the school where he had taught initially had formulated a research theme and promoted joint researches among its teachers; Mr B. played a leading role in these research activities. In this piece I am introducing Mr D. who has also taught at the school deeply committed to educational research, and it is his experiences in that school which has developed his ability in research. He is at present vice-principal of the school to which he owes much of what he is now.

Mr D. graduated from a private university in Tokyo and this university did not have a department of education. However, he obtained the required credits and acquired a teacher certificate. After graduation more than twenty years ago, instead of going on to graduate school, he started teaching at an elementary school in his home town; he is now 45 years old. The elementary school where he has taught is well-known nationally for its active involvement in educational research. Since about the time when he started teaching there, the school has held seminars, regularly (in every three years) inviting teachers from all over the country and these seminars include 'open classes' (class observation), reports of research work and workshops.

It must be emphasized that in the case of this elementary school the interest in and upon research in education has not come about because the school was designated for study by the prefectural or municipal board of education. Rather the school started research activities voluntarily by setting up research objectives and conducting research on the selected theme in a period of two to three years. The strong leadership role taken by the principal becomes very important here of course. Since this research is conducted within the actual school environment, it is natural that the study of actual class activities, or so-called 'action research' plays a dominant part.

Mr D. started his teaching career in such an atmosphere. Three years later, he and his colleagues initiated researches on the question of how to make teaching more effective by the introduction of team-teaching methods. This is the first research subject he had dealt with. With the study team in the school, he first collected literature on team teaching available in Japan and abroad and developed a teaching system after studying this literature. Then, based upon this teaching

system he conducted an experimental class, and re-developed another system reviewing the result of his experiments. He repeated this approach again and again. Meanwhile, he invited researchers from universities and teachers from those schools advanced in educational research to observe his class and to have discussions with him on his teaching system.

He continued these research activities for more than ten years at an elementary school and, after teaching in a different school for some years, he moved back two years ago to the former school, as vice-principal. He has not been involved in research activities at any specialized institutes for educational research, and unilike Mr C., Mr D. has not taught at a university as a part-time lecturer. Yet, his achievement in the field of educational research is widely recognized and highly regarded. He has reported his research work on team teaching to the Society for the Study of Teaching Methods and to the Society for the Study of Education. He has also been invited to a symposium as a panellist, and has co-authored several publications of Hojo Elementary School. This is sufficient perhaps to represent his high ability in educational research. Whithout doubt this has developed at Hajo Elementary School from his readiness to take an active part in the research programme of the school.

To this point, I have identified four different types of researchers in education from the background of their training; a researcher with graduate training, a researcher with training at educational research institute, a researcher with training at attached school and a researcher with training at designated school for study. Most educational researchers, however, usually take a combination of four different courses in their training. It is rare for them to receive only one type of training. Clearly not all the people with a high ability in educational research can teach at institutes of higher learning or become a research worker at specialized institution for educational research. Among them, there may be a teacher-consultant of the local board of education, or a researcher responsible for the inservice training of teachers at a local education centre, or a teacher at an ordinary public school. It is my belief that the ability in education research which these people have acquired will help give direction and rationality to their everyday practice in education.

Implications for Training Programmes of Educational Researchers

The training and career patterns of four types of research workers have now been outlined. Normally, training through graduate courses here classified as Type A is regarded as the most authentic mode of training, but researchers of high ability and commitment may also be produced from the other three modes identified. It may be helpful therefore, if we now endeavour to clarify the common features of the training patterns set out.

Acquisition of Information

First, it may be observed that each type of researcher accepted some responsibility for the training achieved through their individual efforts in searching for reference material and collecting needed information. Researchers of Types B to D above are also university graduates and they had a foundation in the basic knowledge and skill required for undertaking research. Following upon graduation they have been practising teachers, and they have elaborated or refined their knowledge and skill for teaching through their experiences in teaching.

In the process of seeking better information they have studied reference materials in order to identify ways of dealing with a given topic or problem. Frequently this has meant a comparative study of relevant documents, or a scrutiny of previous research findings. In addition, attendance at study meetings on related areas, or lectures on a given theme by experts have been essential steps in this process of assembling information.

It is from such experience that the need has now become widely recognized in Japan for effective research information systems to enable individuals, regardless of their place of living, to have easy access to lists of relevant documents and abstracts of previous research. The idea is to develop systems to collect educational research resources, to process or to set these up systematically, and to disseminate information about these reference sources more effectively. Hence, a national network of such systems is now to be established, and the National Institute for Educational Research has established a study team to examine the proposition; the Institute has in fact already launched a project to establish a research information centre.

Analytical Study of the Instructional Process

Secondly, the types of researchers cited above have all been engaged in the analytical study of actual classroom activities and the investigation of instructional procedures. Studies based on books and documents are inclined to become theoretical, and it hardly needs to be emphasized that educational research should not be confined only to theories of education. It is argued here that realistic studies of the actual teaching process should be encouraged and it will be noted that the illustrative examples of Types B to D were in the classroom or places close to the classroom. The most convenient research context in these cases has been the actual teaching-learning situation teachers have faced daily and so they have analyzed purposefully, and by themselves, their own daily teaching practices or objectives.

The actual study of the educational process, as it occurs, should be an imperative in the preparation of any researcher, including university professors and researchers in educational institutions. It is from such studies that the research abilities of individual researchers are sharpened, since competence comes from experience in handling the real data of teaching and learning. The various

opportunities which exist for such analytical studies may be cited as:

(1) Studies of classroom activites: Objective analyses of the interactions between teachers and pupils in the process of instructional activities. Through the recording of such interactions, ways of improving teaching-learning activities may be explored.

(2) Observation of discussions on demonstration classes: Provides scope for identifying and clarifying problems involved in the demonstration process itself.

(3) Collection and analysis of documents on classroom activities:Recording of classroom instructional programmes, their analyses and utilization as a basis for subsequent instructional planning, lesson strategies and learning assignments.

(4) Analysis of school programmes: Not only classroom instructional activities, but every activity of the school programme, including homeroom activities, club activities, pupil councils and so forth may be usefully recorded and analyzed in providing a context for ideas and perceptions on teacher-pupil relations.

It will be noted that each of the researchers identified in the case studies above has made skilful use of such opportunities for study. Their ability and competence in research has thus originated with an analysis of their own actions in the instructional context.

Participation in Joint Research Projects

It will be noted too that each of the researchers identified above has been strongly motivated by participation on joint research projects which have been influential in developing their research competencies. Examples of the way in which such joint research projects are sponsored may categorized as follows:

(1) Joint study at universities: A university may organize joint study projects among its faculty members. In Japan, the major financial resources for university joint research projects are (a) research funds distributed among faculty members, (b) financial assistance from the Ministry of Education in the form of a special grant for scientific research, and (c) research grants from foundations and other agencies.

Inter-university joint research projects are also undertaken from time to time.

(2) Joint study projects at educational research institutions: In Japan, educational research institutions, approximately 500 in number, organize various joint research projects by recruiting project members not only from the institution itself, but also from outside resources such as universities, schools and other institutions. The selection of research topics or themes in these research institutions reflects social as well as school needs, or issues in a locality.

The National Federation of Educational Research Institutes organizes nation-wide joint study projects from time to time, and this helps to stimulate research activity in individual institutions.

(3) Joint research/survey by administrative agencies: The Ministry of Education

in Japan and the local boards of education also often undertake joint research/survey projects to clarify or to contribute to the solution of administrative problems. In such projects, university professors, professional researchers, and school teachers are usually invited to cooperate with specialized staff of the agency.

(4) Joint study projects at schools: In Japan, many elementary and secondary schools, and those not attached to an education department of a university or designated as a school for study, conduct investigations on topics chosen in relation to their own educational objectives or tasks, or the educational needs of the community concerned. The quality of these in-school joint projects varies from one school to another, but it is quite clear that this type of joint study helps to develop research abilities of school teachers at large.

(5) Joint study projects of professional associations: Professional bodies of teachers, and subject specialists also always set common themes and topics for study, and request their members to conduct their own enquiries in relation to such themes. Opportunities to present the outcome of such enquiries take many forms, and more academic societies also often conduct joint study projects.

Participation in Inservice Training Programmes

Lastly, the participation in inservice training programmes has to be mentioned because of the stimulus and opportunity it provides for the development of research abilities. In Japan, the Ministry of Education, the local boards of education, municipal or prefectural centres, and schools all organize various types of inservice training programmes for school teachers and participation in these activities is helpful to the development of research abilities, cometencies and interests among practising teachers.

The principle of voluntary participation is the key feature of inservice training in Japan. The predominant aim is the professional enrichment of teachers through improved abilities and understanding. Generally speaking, participation in such training programmes is not directly rewarded by promotional outcomes, salary increases or other material benefits.

Neverthless, it is possible to identify patterns in the national arrangements for such services. The Ministry of Education, for instance implements annually the in-service programmes for principals, vice-principals and key teachers, who are selected by all prefectural boards of education. The programmes for individuals at this level concentrate mainly on school administration, curriculum theory and instructional methods. The municipal and prefectural boards of education, on the other hand, tend to concentrate on the needs of specific groups of teachers such as newly recruited teachers, teachers of ten-year experience and pricipals etc. and to extend their basic training. The municipal and prefectural education centres, which are usually equipped with professional staff and special facilities for inservice training are especially concerned with classroom teaching and school management, and their courses normally deal with the teaching of subjects or the understanding

of students or specifically controversial issues. School-based in-service programmes are even more complex, some involve all staff, others are sectional. In addition, private study groups are widespread and often make very significant contributions to the professional development of the teachers concerned. In short, Japanese teachers are highly motivated in seeking to advance their professional knowledge and skill and many avenues have been developed to enable them to do so. These often involve the use of research-based knowledge or expertise and participation in experimental projects.

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This essay has been an attempt to clarify the backgrounds and paths toward research expertise followed by four researchers in Japan who represent the various contexts in which educational research is promoted and advanced. Clearly there is such scope for collaboration between each of contexts. To begin it may be argued that the analysis suggests that a systematization of these opportunities for training educational researchers is a crucial task still to be undertaken in Japan.

NEW DEVELOPMENTS IN UNIVERSITY TRAINING FOR RESEARCH

—Distinctive Opportunities for Practising Teachers in Japan—

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Introduction

In order to cope with the social demand for elementary school teachers, and to provide training to improve their ability and quality, the Jōetsu University of Teacher Education and the Hyōgo University of Teacher Education have departments for elementary school teacher training, and a graduate school for teacher research and training. Both universities were established as national universities in October 1978, and the overall emphasis in both is on graduate school study to promote practical research concerned with school education.

As educators, teachers are required to have highly developed professional abilities and qualities such as a broad liberal arts background, professional academic ability in the various subjects, a deep understanding of educational principles and methods, as well as of human growth and development, and excellent educational skills—all supported by human love and a sense of mission. In the light of these requirements, the Central Council for Education submitted a recommendation to the Minister of Education in June 1971, stating the necessity of establishing Master's level graduate schools for the purpose of providing for high level educational research and for training designed to improve the professional quality and ability of teachers in active service. Then, in July 1972, the Ministry of Education's Council on Educational Personnel Training proposed the establishment of (1) universities of teacher education based on a new design which included improvements in training for the development of higher quality elementary school teachers, and (2) Master's level graduate schools for the purpose of providing training for teachers in active service.

On receiving these recommendations, the Ministry of Education, in May 1973, set up a "Committee to Investigate the Formation of New Design Universities of

Teacher Education" so that the details of the establishment of such universities could be worked out. A year later, in May 1974, this committee submitted its report entitled "On the Design of New Universities and Graduate Schools for Teachers", which concluded:

> "In order to deal with the task of improving the quality and ability of teachers, it is necessary to provide comprehensive facilities for undergraduate education and study/research for teachers in active service. It is also desirable that integrated undergraduate and graduate facilities be established as a new organ for teacher education and research".

On the basis of this report, and other considerations, the Ministry of Education proceeded with preparations for the establishment of the Jōetsu and Hyōgo Universities of Teacher Education. To provide for the establishment of such new universities, a bill entitled "Partial Revision of the National School Establishment Law" was submitted to the Diet in February 1978. The revised law was promulgated in June of that year, and the two universities were officially established on October 1, 1978.

Purpose and Student Admission Plans for the Undergraduate and Graduate Schools

Purpose of the Undergraduate and Graduate Schools

In the graduate schools of both Jōetsu and Hyōgo Universities of Teacher Education, approximately two thirds of the total number of students are to be elementary and lower secondary teachers with at least three years of teaching experience. The main objective in these graduate schools will be to develop teachers capable of life-long, continuing growth as educators through comprehensive professional research in the sciences related to elementary and lower secondary educational practice.

At the undergraduate level, the objective is to train teachers for elementary education, where we consider the basic foundation for human education is laid. New approaches are to be adopted to envigorate initial practical experience in teaching and training and to ensure that teachers possess not only instructional ability in all subjects and fields, but also a comprehensive understanding of the growth and development of infants and young children.

Student Admission Plans

For both universities, the number of new admissons each year is to be 300 graduate school students and 200 undergraduate students. In the case of Jōetsu University of Teacher Education, undergraduate students have been admitted from April 1981, and graduate students will be admitted from April 1983. In the case of Hyōgo University of Teacher Education, graduate students were admitted from

April 1980, and undergraduate students were admitted from April 1982.

It should be mentioned that it was officially decided to initially admit 150 graduate students to the Hyōgo University of Teacher Education in April 1980. However, by September 1979, there were already 523 applicants, so that selective admissions became necessary and by October of the same year 134 teachers in active service and 16 other applicants were granted admission.

Admission Qualifications and the Treatment of Graduate Students who are Teachers in Active Service

In general, the application requirements for the graduate schools of these universities are basically the same as those from other graduate schools. However, as mentioned previously, approximately two-thirds of all admitted students must be elementary and lower secondary teachers with at least three years of teaching experience. Also, in the case of public school teachers who apply and pass the admission examination and have the approval of the local board of education, it is possible to carry out research and study activities at these graduate schools while maintaining their status and salaries as teachers (i.e., they are to be treated as teachers on official leave for job-related training). In regrard to admission and selection, special consideration is given to the examination content for experienced teachers in order to make it easier for them to take and pass the examination.

Finally, the application requirement for undergraduate students is the same as that for other universities, i.e. possession of a upper secondary school diploma.

Outline of the Organization and Research

Education and research are organized in the same way as these two universities, as indicated in the following.

A. Graduate School Organization

Both graduate schools have a two-year Master's Degree course: School Educational Research which is designed in terms of the realities of elementary and lower secondary education. It is not limited to any specific or narrow fields, and it encourages high-level, comprehensive research in education. Nine courses, in four areas of specialization, are provided as follows:

School Education Specialization (Jōestu 50 students, Hyōgo 60 students)

In this major specialism, comprehensive educational research is carried out concerning the theory and practice of school education, with the support of research results of such related sciences as pedagogy and psychology. To achieve educational coherence in regrad to actual practice and the characteristics of the

functional field of education, the following four courses have been provided:

(1) Basics of Education—dealing mainly with the various sciences concerning educational ideas and the growth and development of human beings, which comprise the foundation for school education;
(2) Educational Management—dealing mainly with educational administration and financing, educational law, educational systems, school and class management, etc;
(3) Educational Methodology—dealing mainly with teaching/learning systems, development and structuring of educational programmes, educational methods, educational technology, educational evaluation, etc;
(4) Student Instruction—dealing mainly with special activities, student instruction, guidance and counselling, moral education, etc.

Subject and Area of Education Specialization (Jōetsu 210 students, Hyōgo 190 students)

In this major specialism, educational research is carried out in the sciences related to the 'areas' of kindergarten education and the subjects of elementary and lower secondary education, with the focus on educational practice in each subject, and with consideration of the interdisciplinary relations and border areas. In taking account of characteristics of cognition, expression, and behaviour in the developmental process of school students, as well as factors in the systematization of the various fields involved in school subjects and areas, the following five courses have been provided:

(1) Language—dealing mainly with Japanese and English;
(2) Social Studies;
(3) Natural sciences—dealing mainly with mathematics and science;
(4) Arts—dealing mainly with music and art;
(5) Health and Living—dealing mainly with homemaking, health and physical education

Infant Education Specialization (Jōetsu 15 students, Hyōgo 20 students)

In this major, educational research is carried out concerning practice in modern infant education as it relates to home, kindergarten, and elementary school education, and with the focus of research on such education as the departure point for life-long education.

Handicapped Child Education Specialization (Jōetsu 25 students, Hyōgo 30 students)

In this major, the focus is placed especially on mental and emotional handicaps, with emphasis on understanding of the characteristics and process of the growth and development of handicapped children. Comprehensive technical research is carried out concerning the education, psychology, pathology, and

instructional methodology for handicapped children.

B. Undergraduate Organization

The undergraduate school education course: Elementary School Teacher Training provides for the education of kindergarten and elementary school teachers and gives them comprehensive abilities and instructional skills for all areas of elementary education. Furthermore, in order to increase professional ability in specific fields, there are special courses modelled on those provided for the graduate school level.

C. Auxiliary Educational Research Facilities

A library, experimental schools (a kindergarten, elementary school, lower secondary, and a special school for handicapped children are planned), and a school education research centre, is to be established at each university. In particular, the school education research centre will be designed:

(1) to collect information concerning the actual activities in schools, carry out systematic research on the basis of such information, and feed back the results to schools, and

(2) in cooperation with the experimental schools, to survey, plan, manage and research on (a) practice teaching for undergraduate students and (b) such graduate student activities as instructional analysis of actual classroom activities.

D. Faculty Organization

The university faculty is to be organized so that each academic field is professionally deepened, so that practical research concerning school education is continually enriched, and so that cooperation among the various technical fields can be obtained through the adoption of broad lectureships corresponding to major field and course divisions. Furthermore, in order to deal flexibly with the promotion of educational research, project teams are to be set up whenever necessary as interdisciplinary groupings cutting across course and field divisions.

Curriculum Organization Policies

For both Jōetsu and Hyōgo Universities of Teacher Education, the curriculum will be worked out on a rolling reform or continuing basis up to the time students begin to be admitted, and after that independent revisions will be made. At present, the policies common to both universities are as follows:

Graduate School Curriculum Policies

The graduate school curriculum is to be formed in the light of research results in the various fields and after consideration of the contemporary problem areas in school education practice, which are to be its primary focus. The lecturing programme will cover general subjects, major field subjects, and elective subjects. The purpose of the general subjects is to provide teachers with wide-ranging and high level professional outlook. They are to include courses related to human growth and development, educational organization and management, teaching and learning systems, student guidance and instruction. All students are to be required to earn 8-12 credits in such subjects.

Major field subjects are to comprise those subjects related to the technical aspects of each major field, and they are to be established in consideration of the individual research interests of students. Research leading to the preparation of a Master's thesis would also be included within this context.

Elective subjects will be expected to deal with more penetrating analyses of educational issues and new trends in educational sciences, regardless of their relation to specific major fields and courses. Credits for these are not to be included in the requirements for graduation, but as their objective is to serve the purpose of developing a highly human, professional and liberal arts foundation for teachers, it is desirable that students take as many of these courses as possible.

The graduation requirements for a Master's degree in these two universities will include two years or more of study, the acquisition of at least 34 credits, as well as thesis guidance and successful completion of an acceptable thesis.

In addition, the design of the teaching curriculum in these universities is to have the following general characteristics:

(1) The curriculum is to be formed so that it is organically and comprehensively related to educational practice. Also, educational research is to be directly related to practice by making effective use of the experimental school, the school education research centre and so on;

(2) That subjects are to be established with high level academic and practical content so that the professional experience of teachers can be used to full advantage in educational research;

(3) That comprehensive (or coordinative) subjects are to be established with the aim of emphasizing the interrelations between major fields and courses;

(4) That 'special research', with emphasis on practice, is to be provided for, and such research is to be carried out so that it leads to the Master's thesis.

Undergraduate Curriculum Policies

The undergraduate curriculum is to be formed from basic liberal arts subjects, general subjects for teacher training, and special technical subjects. The basic liberal arts subjects are to develop the general intellectual background necessary

for elementary school teachers. General subjects for teacher training are to be subjects related to school teaching, with special emphasis on improving education in its pratical aspects. Special technical subjects are to be established for various majors and courses with the aim of increasing professional and instructional ability in the various fields.

In addition, here too the teaching curriculum in these universities will have the following general characteristics:

(1) The interrelation and coordination of kindergarten and elementary school education is to be taken into account in formulating the curriculum;
(2) That comprehensive subjects are to be established in line with the graduate school curriculum organization;
(3) That practice, and especially practice teaching, is to be carried out on the basis of a systematic plan and efforts are to be made to improve its quality and greatly increase the amount of time and credits devoted to it;
(4) That consideration is to be given to the acquisition of instructional ability for such skill-centred subjects as foreign languages, music, art, and physical education.

Graduate Schools in Existing Universitis of Teacher Education

In addition to Jōetsu and Hyōgo Universities of Teacher Education, there already exist universities of teacher education or comprehensive universities with teacher education divisions, in all 47 prefectures of Japan. Elementary school teachers are usually trained in 4 year training courses in national universities. In recent years, Master's course graduate schools have also been established at these institutions, and at present (1980) they have been completed at six institutions. The Yokohama National University was the first to establish a graduate course in its Department of Education and its programme is therefore outlined here as an example of such developments. Its courses at the graduate level are open to teachers, on the job, as an opportunity for long-term, inservice training.

The Department of Education of Yokohama National University has three courses: one for elementary school teacher training, another one for lower secondary school teacher training and the remaining one for special education teacher training. Its Graduate School in Education is further sub-divided into eleven courses: Educational Administration, Teaching of Japanese Language and Literature, Teaching of Social Studies, Mathematics Education, Science Education, Teaching of Music, Teaching of Fine Arts, Health and Physical Education, Teaching of Homemaking, Teaching of English Language, and Special Education.

The initial four-year course is to provide pre-service teacher training programmes and to help students to acquire basic and professional knowledge and skills in education. The two-year master's degree course, following on from this beginning, provides an advanced programme of study in education so that students

may develop their theoretical and practice abilities not only in teaching but also in conducting educational research.

To facilitate these training programmes, the Department of Education of Yokohama National University runs two attached elementary schools, two attached lower secondary schools and one attached school for handicapped children. The Department also has an Educational Technology and Audio-Visual Education Centre. These attached schools and research centre are key institutions for training of educational researchers at university.

At graduate courses, students are taught theoretical as well as the practical aspects of educational research and special emphasis is placed on knowledge and skills for conducting practical and experimental projects. The instructional contents of each subject in the curriculum, teaching methods, and planning in education are required areas of study for every student at graduate courses. Students are also encouraged to utilize facilities of attached schools and Educational Technology and Audio-Visual Education Centre in order to make their study in research more practice-oriented.

Thus, in planning training programmes for educational researchers, one is obliged to pay attention to both pre-service and inservice training programmes. It is widely accepted among educationists in Japan that school teachers should be encouraged to take an interest and develop skills for educational research. Inservice training programmes for school teachers are also organized systematically in Japan. The prefectural and the major municipal boards of education have established their own institutions for educational research and for inservice training of teachers.

In addition, since 1970, the Ministry of Education of Japan has offered a subvention to prefectural programmes of training for newly-recruited teachers of the public school within the area. The subvention covers half of necessary costs of the programme, which lasts sixteen days. The content of the programme covers such topics as modern pedagogy, school systems, teacher's ethics, the role of teachers' union, teacher's welfare, school administration, etc. The programme is intended to provide a good opportunity for newly-recruited school teachers to gain a wider and practical knowledge of actual educational practices and to make them realize their responsibilities for and expectations from the public.

These initiation training programmes for teachers were extended in 1977 to a 26-day programme, to incorporate additional training elements such as practice teaching, observations of classroom teaching, etc. In that year too, the Ministry of Education introduced inservice training programmes for public school teachers who have had five years experience. These programmes last for 6 days and are organized by prefectural boards of education. Once again the Ministry provides a subvention to the prefectural board of education for this. Here too such inservice training programmes may be viewed as a contribution to the in-school training of educational researchers and they emphasize again the strong emphasis in Japan on

the participation of practising teachers to the advancement of research and development at all levels. Given the long history in Japan of aloofness in the relationships between universities and the community they serve, these developments aimed at linking the universities with practising teachers in elementary and secondary schools are significant. Indeed, they have far-reaching consequences.

Section Two

PERSPECTIVES ON THE CONTRIBUTIONS OF UNIVERSITIES

THE STATUS AND PROSPECTS OF EDUCATIONAL RESEARCH IN THE PHILIPPINES—A View from the Academy—

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Introduction

For the purpose of this paper, educational research is defined as the systematic, disciplined and critical generation of new knowledge concerning the presumed relations among educational facts and problems, and/or the revision of accepted conclusions, theories or laws in the light of newly discovered facts. This definition is important since in the Philippines research is oftentimes loosely referred to as any activity aimed at gathering or collecting data and information about people, situations or phenomena. Similarly, calculating correlations between two sets of data is generally understood as research, regardless of the presence or absence of some theoretical framework. This popular notion of research is most probably the reason why in the Philippines, educational research has not progressed very much from normative surveys. Thus, many of the researches in education are of the status survey-type research.

The current concerns, however, with the age-old problems of poor academic achievement, high dropout rates, inefficient and wasteful educational delivery systems, curricular irrelevance, and improving teacher effectiveness underscore the importance of disciplined and systematic inquiries into the whys, hows and consequences of these problems.

The incidence and extent of these problems have been documented and quantified, again and again, by the national surveys but very little knowledge about the causes, nature and consequences of these phenomena has been generated for the simple reason that these surveys lacked the guidance of a comprehensive conceptual framework.

The following discussion of the status and prospects of educational research in the Philippines should be understood, therefore, in the light of these introductory statements.

Training of Educational Researchers and Current Educational Research Practices

In the Philippines, training in educational research is generally obtained from a formal course in research offered in colleges and universities in connection with graduate studies, and the writing of a thesis needed to complete a master's or doctorate degree in education. There may be a few educational researchers, who have learned to do research outside this regular route, but they are a rare breed indeed. This statement is borne out by the fact that most researches in the field of education in the Philippines are mostly masteral theses and doctoral dissertations. Some researches are done by the faculty of colleges/universities and a very small number of studies are done outside the graduate schools, i.e. by the Ministry of Education and Culture and other research institutions. Research institutes and short-term training for educational researchers are held intermittently and primarily by higher educational institutions, Ministry of Education and Culture and other interested groups, so that a person doing research cannot depend on such training programmes for his/her professional growth and development.

Considering the above observations an important question is—how adequate is the research course(s) required of graduate students in Graduate Schools of Education in terms of equipping the students with the knowledge and skills needed for educational research ? Along with this question are questions such as:

(1) Does the graduate course in research give a thorough understanding of the nature and purpose of educational research ?

(2) To what extent does the graduate course in research develop the following research skills, namely: (a) selecting and focussing a timely and meaningful research problem, (b) conceptualizing a research problem and formulating testable research hypotheses of theoretical import, (c) selecting appropriate research designs, (d) developing and ensuring validity and reliability of research instruments and techniques, (e) data collection, (f) statistical and data processing, (g) interpreting research results, making inferences and conclusions based on research results, and (h) writing research reports and disseminating research findings to different publics ?

Insights into the answers to these questions may be drawn from a 'State-of-the-Art Review of Teacher Effectiveness Research in the Philippines'. (Cortes, 1978). The results of this review reveal that:

(1) Educational research in the Philippines appear to the thriving mainly in universities and graduate schools of education;

(2) Most of the researches done in education as of 1975 are those required for the completion of a graduate degree, specifically a masteral degree. This is to be expected considering that most doctoral programmes in education started

only during the 1960s. Although the number of doctoral dissertations has increased during the last decade, the problems investigated fall mainly under the areas of educational administration, instrucution and supervision. More recently, some doctoral dissertations have dealt with educational policy, e.g. bilingual education, national college entrance examination (NCEE);

(3) Very few educational research studies are relational-type studies;

(4) The most common research designs used are non-experimental designs utilizing survey research methods;

(5) Higher level statistical analyses, such as multivariate statistical techniques, factor analysis, multiple regression techniques, multiple discriminant analysis are rarely utilized;

(6) Qualitative research technique such as ethnographic research procedures and interaction analysis appear to be minimally employed;

(7) Many of the research studies in education are micro-studies done in classroom and school settings. This is understandable considering that these researches are largely those conducted by graduate students who are constrained by time and resources.

The above findings are corroborated by a study conducted by Andrew Gonzales and A. del Corro entitled, *Doctoral Programs in Philippine Universities*, 1978. The authors stress that meeting the research needs of the Philippines depends mainly on the strengthening of the research component of doctoral programmes in the universities. Unfortunately, the authors observe: "One cannot have an adequate research-training programme unless one has a core faculty who themselves do research • • • as long as the majority of one's graduate faculty are part-time, it will be nigh impossible to train graduate students for research skills • • • " (p. 67).

Furthermore, the authors found that based on doctoral enrolment and graduates, there are only three main graduate centres in the Philippines, namely: Centro Escolar University (CEU), University of the Philippines (UP), and University of Santo Tomas (UST). Unfortunately, only the University of the Philippines has the smallest proportion of part-time faculty, 13%, compared to 75% (CEU) and 69% (UST). It must also be mentioned especially, at this point, that of the 19 universities offering a total of 62 doctoral programmes in the various disciplines, 20 or 32.5% are doctoral programmes in education. Considering the part-time status of the faculty for these programmes, the general observations made regrading the quality of educational researches done in the Philippines appear to be reconfirmed by the Gonzales and del Corro study. In fact, quoting from the authors: "There is an excess of studies done in education of a repetitive nature, mostly institutional studies or studies of a group of schools within a sub-system, yielding much data of dubious utility because of the lack of a theoretical framework". (p. 57).

The current concerns of the Ministry of Education and Culture related to improving the quality of education at all levels of the educational system, but more

especially at the primary level, has led to the increased interest in research as a basis for educational planning, educational policy formulation and educational reform. However, the current practice is to draw from the academy and other research institutions, consultants to conceptualize and design the researches that have to be undertaken for educational planning purposes and in support of educational innovations or reforms. In performing these functions, these consultants are assisted by a research staff whose members are drawn from the Ministry of Education and Culture and its other instrumentalities such as the EDPITAF or Educational Project Implementing Task Force. Moreover, these researches are mainly status surveys aimed at gathering benchmark data.

One interesting development related to this practice of linking the MEC researchers with faculty researchers from the academy is the narrowing of the theory-practice gap and the trend toward interdisciplinary approaches to the study of education, leading to the opening of new research areas in the field of education. Whereas, traditionally educational research was confined to normative surveys of classroom situations, students, teachers, and schools or institutions, now the thrusts in educational research are on learning processes, teacher-pupil interactions in different contexts, i.e. inside the classroom, in the larger school settings, as well as on the interrelationships of the school as a social institution with its larger environment—society at large. In other words, new frontiers and new problems for educational research are emerging, which indicate the need for a new set of concepts, theories and methodologies. However, outside the graduate schools of education, very little formal training for educational researchers is occurring.

The Regional Center for Educational Innovation and Technology (INNOTECH) based in the Philippines has a programme for the training of educational reserchers. However its training is focussed mainly on action research and the evaluation of educational innovation and as an integral component of a 6-month training programme for educational planners and managers. The training programme is, furthermore, addressed to researchers and educational planners of the Ministry of Education of member SEAMEO countries. Opportunities to act as research assistants to researchers of the few research institutions such as the Institute of Philippine Culture of the Ateneo de Manila University, Philippine Social Science Research Council, National Research Council of the Philippines are other venues for research training. It must be noted, however, that these research institutions do very little research in the field of education, their main interest being social science and natural science research.

The Expanding Educational Research Map: Perspectives for Filipino Researchers

Historically, educational research began with the investigations carried on by psychologists, historians and philosophers on educational institutions and processes

of education. The disciplines of psychology, history, and philosophy are still very much in educational research but these have been recently joined by many other disciplines such as anthropology, economics, political science, sociology and other sciences. These recent developments in educational research have introduced the tools and theories of these other disciplines to shed light on many specific problems related to the different dimensions and aspects of education, as a process and a product. Some examples of these are: education production function (EPF) analysis, ethnographic futures research techiniques, ethnographic (qualitative) research techniques and systems analysis.

The entry of the other disciplines in the study of educational institutions, educational processes and educational outcomes has made contemporary educational research extremely exciting and challenging. The educational research has, as a result, become more complex and broader. Ralph Tyler observed forty years ago that research on education was confined to "subjects, learners, methods of teaching and teachers" implying that education was understood to be confined to a process that involues only subjects, learners, methods of teaching and teachers, and each of these was believed to have only one or two dimensions. The major features of the educational institutions were equally simple consisting of schools, administrators and administrative policies. Today, however, education, viewed as both a process and a product, includes many dimensions and covers a vast area which goes beyond the strictly teaching-learning situation and the factors that mediate between teacher-pupil interactions, e.g. materials and methods used in teaching.

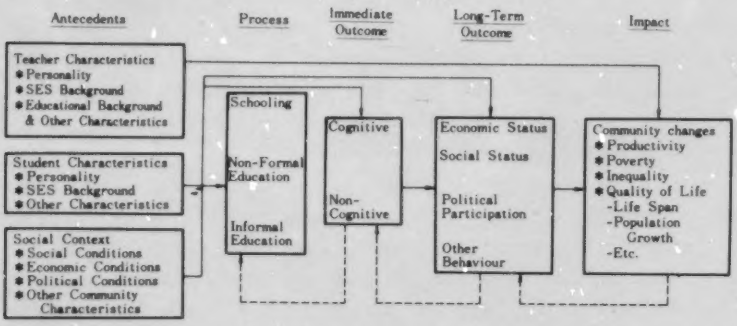
Figure 1 is an illustration of the complexity and vastness of the educational map that has developed as a result of the multi-disciplinary approach to educational research. It suggests that education viewed as a process is not confined to schools and to the technology, organization and structure of schooling. Likewise, as a process, education occures not just in school but in non-school settings. As a product, education does not mean only the immediate changes and gains in cognitions, attitudes, and skills that occur in students as they go through the educational or teaching-learning process, but includes other long-term consequences on the individual student and his community. This diagram depicts the areas of research on education that have emerged as a consequence of the application of the theories of economics, sociology, political science, anthropology and other disciplines in the study of educational phenomena.

Specifically, the new research areas in education indicated by this diagram are the following:

Research Studies in Education and Culture

It is surprising that while the traditional role of schools is the transmission of culture, the tools of anthropology as a discipline have not been applied in the study of the educational process until only very recently. As Theodor Brameld observed:

Figure 1 : The Antecedents, Causes, Consequences and Interactions of Education: A Paradigm for Conceptualizing Educational Research Problems



An adaptation from "Determinants of School Achievement in Developing Countries: The Educational Productive Function", by L. Alexander and J. Simmons, IBRD Staff Working Paper No. 201, March 1975 and IDRC, *A Review of Teacher Effectiveness*, etc., November, 1979.

"Despite the steady increase of interest, anthropology and education still maintain a tenuous relationship. It is frontier area". (Brameld & Sullivan, 1961). Understanding the processes of cultural change and cultural stability are the domains of anthropology. It is obvious that if the schools have to reflect as well as to generate change and to know what culture to transmit and preserve, our educators need more than just a nodding acquaintance of anthropology. Studies of the processes of education and educational institutions by anthropologists led by George Spindler, Jules Henry, Margaret Mead, Martin Loeb, to mention a few, have generated a wealth of knowledge about the cultural factors that impinge on schools and the learning process, and have added new dimensions to our conceptual view of education. New concepts such as the school as an 'enculturating' agency and education as a 'process of enculturation' and 'I.Q. tests as culture-bound' have not only broadened our understanding of education but have also pointed out the importance of cross-cultural studies of education.

Education and culture is an area that has been scarcely touched in the Philippines. I believe, much of our despair connected with the seeming failure of our schools to square with changes taking place in our society arises from our lack of understanding of the interplay between culture and education. Also our search for a cultural identity appears to have been hampered by the lack of research in this area.

Any sensible plan for making the school spearhead the desirable changes must take into account the cultural forces that the school interacts with.

Education and Economic Growth

The 18th and 19th century economists like Adam Smith and Alfred Marshall

had both recognized the importance of education in economic development. However, it was not until during the decade of the 60s and 70s when economists finally started devoting considerable time to the assessment of the contribution of education to economic growth. This group of economists composed mainly of Theodor Schultz, G. Becker, H. Solow, E. Denison, J. Vaizey, Harbison and Myers, among others, have come up with very significant findings showing a positive relationship between education and economic growth. That education is a form of 'investment' and trained manpower is 'capital' are concepts that have emerged as a result of the analysis of the contribution of education to economic growth. Consequently, developed and developing countries, such as the Philippines, have started to give careful attention to educational planning and integrating it with the overall national development plan. The importance of educated manpower of the right types and numbers in economic development has placed the improvement of education among the first items of a nation's agenda for development in the 1980s and educational planning as a major strategy. Much of the research in this area is directed toward a great quantification of the economic value of education. In the Philippines, studies along this line are few. The pioneers in this area have been a few American economists like de Voretz and some American doctoral candidates. The only Filipino who has started studies on the relationship between education and economic development is Dr E. Tan of the Department of Education, University of the Philippines. Very recently, a candidate for the Ed. D in educational administration in the University's College of Education, defended his thesis on "Schooling and other Forms of Human Capital and Labour Productivity". One of his major findings is that in the shoe industry a worker who has completed high school is more productive than who has gone to college. In fact, college education was found to be negatively associated with productivity. Needless to state, we need more investigations in this particular aspect of education especially when we consider the phenomenon of the 'educated unemployed' in this country. Education in the Philippines, contrary to the findings of Harbison and Myers and recent research studies, appears not be paying off. Why ? What types, what levels, and what kinds of education would bring greater economic returns in Philippine society ? Or can education really make a difference in the earnings or productivity of individuals under conditions of oppressive socio-economic structures ?

Education and Political Socialization and Integration

The political scientists have likewise invaded educational research. Pioneers in these studies of education and political developments are J. Coleman, S. Verba, L. Pye, B. Hoselitz, G. Almond and many others. Schools, according to this group of political scientists, are instruments of political socialization and play a vital role in political integration and recruitment. How children acquire political attitudes and develop the right attitudes, feelings or vice versa about the established systems are fertile areas for research. Such concepts as 'powerlessness' and 'sense of trust'

are subjects of investigation in connection with the understanding of student activism. How have our schools performed in educating our population for effective participation in our polity ? What is the relationship between formal schooling and student activism ? Again this is an exciting area for study.

Education and Its Social Context

The application of the theories and tools of sociology on the study of education has come up with interesting studies of the school as a formal organization and a social system governed by role structures and operating as a bureaucracy. Studies done by N. Gross, W. Waller, J. Coleman and Getzels, etc. have expanded educational research into areas not heretofore considered relevant to the educational processes. The concept of 'role conflict' in the analysis of teacher behaviour and behaviour of school administrators has guided many of the studies done on school administration in recent years. Peer group influence on student behaviour and the idea that the school is a socializing agency are ideas contributed by the current sociological studies of educational institutions and the educative process. The relationship between such variables as socio-economic status, sex, age and place of residence and student achievement are current research interests in the field of education.

Research on Teaching Effectiveness

What accounts for teaching effectivenss ? How much of teaching effectiveness can be ascribed to teachers, students, school environment, school management or do students learn/not learn regardless of teachers and schools ? How do we measure teaching effectiveness ? These are research questions for which, at the moment, we do not have ready answers. A global study on researches done on teaching effectiveness (IDRC, 1979) points out to the need more scientific and empirical research on this basic area of inquiry, if we expect to produce or educate teachers that could make a difference in the cognitive, affective and skills learning of our students.

Research on School System Performance

The current concerns about efficiency, effectiveness and equity in education have led to the need for a more systematic and controlled observation and assessment of the performance of the school system which in turn have triggered the efforts to develop measures and/or indicators of efficiency and effectivenss of school system performance. This area has hardly been touched by educational research in the Philippines, although current attempts at starting investigations along this line have begun.

Concluding Statement

The years ahead hold great challenge to educational research in the Philippines not only because of the growing complexity of the contexts in which the educational process is occurring, but in view of the need for valid and reliable knowledge about this process in diverse and unique situations and for various purposes, such as educational policymaking, educational planning, curriculum assessment and improving the quality of student learning. However, the response to this challenge will depend very much on the training of researchers, the infrastrucres and logistics for research, as well as the extent to which research products are utilized in educational practice.

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TRAINING IN UNIVERSITY–BASED INSTITUTIONS
—The Bangladesh Example—

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Introduction

Educational research today is no longer a mere branch of social science research. It has actually developed into a distinct discipline, accumulating and integrating content, structure, and methodology not only from education and its practice, but largely from most of the other branches of science and mathematics. There is also a discernible trend of convergence in expertise and interests which contributes increasingly and quite substantially to the techniques of educational research, as well as its content. The result is of course a rich and vast quantity of technical literature.

The training of a young educational researcher should be so carefully designed as to initially acquaint him broadly with the basic language and philosophy of educational research. But the starting point is really a very difficult one to identify. The conventional methods of selecting trainees for educational research as a profession, have led to the formation of groups composed of individuals with diverse academic preparation and aptitudes. This problem is often overlooked by those who design training courses and degree programmes and this results in frustrating experiences for a good number of young trainees.

Another allied problem arises from the fact that, in most of the countries of the world and particularly in those of the Asian region, the initial training of a large majority of young educational researchers is usually provided by institutions of higher learning concerned mostly with teacher education. And teacher education programmes, particularly in the developing countries, tend to draw only a few trainees having the appropriate potentialities and vision for educational research work. The more welcome trend however is that special organizations and university departments have been established in the recent decades in many countries of the Asian region in order to conduct educational research studies and to provide pre-service as well as in-service training for educational researchers.

Methodologies of educational research should necessarily be universal in nature. Yet, since the cultural differences between nations are so obvious, it should not be necessary to emphasize that many of the data-gathering instruments used for

educational research work in the western world are inappropriate for use in widely different cultural settings in other parts of the world. This simple observation is frequently ignored by those who design research studies in the Asian region. And over-enthusiastic young researchers tend to use these tools blindly.

Young educational researchers usually get their training through their enrolment in formal academic degree programmes which require individualized research studies under a certain amount of guidance. This academic exercise can, at most, work only as an initial motivating factor for further work. Sadly, in many cases, it becomes the terminal point, since so many who carry out an initial investigation do not continue with comparable inquiries afterwards in their careers.

There is also a recent trend for conducting large-scale educational research projects by teams of professional researchers. Occasionally these projects are based upon inter-disciplinary approaches and they provide good opportunities to young educational researchers for practical training through actual participation. In the developing world, however, many of these studies are sponsored either by foreign agencies or by the governments, and are open to the criticism of being biased. In addition, because of the largeness of these projects, individual assignments occasionally become so much specialized that a young researcher may get the view of only a negligible part of the whole system.

We may note briefly too, in passing, the mishaps which occur through the misuse of statistical techniques in educational research work, if the initial training has not been designed with sufficient care and consideration. Initial enthusiasm without sufficient supporting background and sustained efforts for professional growth, often leads to an inappropriate choice of techniques and misinterpretation of information.

The foregoing discussion points out only briefly some of the outstanding problems regarding the training of young educational researchers. The writer readily admits that these problems in the professional training of educational researchers are present and troubling in a developing country like Bangladesh.

New Thinking, Practices and Projects

However, apart from the academic interest in basic research studies which are being conducted by individuals in academic establishments, there has been a shift of emphasis in Bangladesh recently towards large-scale research projects incorporating mostly innovative educational experiments. Some of these recent projects have also been exploratory or explanatory survey studies conducted as in-depth analysis of trends that are taking place as a result of changes in socio-economic conditions. All these studies, either experimental or survey type, are being done in response to the national needs for solution of outstanding educational issues in relation to social, economic, political and cultural problems.

In spite of some admirable efforts in the past to reform the education system

so that it may become more responsive to the socio-economic needs of the people, it has in fact changed only slightly and its essentially elitist character remains. As is to be expected the consequences are serious, and paradoxical in many cases.

The literacy levels of Bangladesh, for instance, are very low. Only 22 per cent of the population are literate and this proportion is much lower for the female population, the rural population, in various tribal areas, for the poorer section of the population and so on. The enrolment ratio at the primary education level (grades I-V, corresponding to the ages of 5 plus years to 9 plus years) also continues to be very low. Only about 60 per cent of the age group population are enrolled and this proportion is also much lower for the higher class levels in the education system. Enrolement ratios are therefore seriously low in the case of all disadvantaged groups of people. Educational opportunities for a child are determined not so much by his or her real potentialities as by the socio-economic status of the family. Moreover, there is a constant migration of educated manpower from the rural to the urban areas, and from Bangladesh itself to the affluent nations. There is thus a dearth of manpower with appropriate technological training for industrial development. The economy, in this tragic circle, cannot absorb the graduates of higher education programmes because of the apparent mismatch between education and manpower needs. An elitist education system in these conditions alienates graduates from the society and in Bangladesh, the imbalance between demand for educated manpower and its supply, has led to serious consequences in recent years. The socio-political unrest now evident is one of the consequences of the unemployment of the educated youth of the country. Tragically a high density of population, and its rapid growth, are continuously adding to the seriousness of the problems.

Educational (as well as social science) research studies are therefore mostly directed towards finding appropriate solutions to national problems of this dramatic character. It is apparent too that the findings of educational research studies have influenced the formulation of policies and programmes for educational reforms during the last decade. This will be quite evident if one considers the Reports of the Bangladesh Education Commission (1974), the First Five-Year Plan (1973-'78), the Two-Year Plan (1978-'80), the Second Five-Year Plan (1980-'85), and the National Curriculum and Syllabus Committee (1977). Furthermore, these documents tend to make a special appeal for acceleration of such educational research studies. The reforms achieved to date are far from what the nation requires however for sound progress.

The Second Five-Year Plan (1980-'85), the recommendations of which are now in the gradual process of implementation, has drawn up programnes for:

(1) The universalization of primary education by 1985;
(2) The introduction of a nation-wide mass education system for the liquidation of illiteracy;
(3) The vocationalization of education;

(4) The equalization of educational opportunities;
(5) The making of education more responsive to the social and economic needs of the country; and
(6) For conducting appropriate studies in order to realize those objectives.

The government has already set up a number of institutions and agencies to help achieve these purposes. Private voluntary agencies as well as international organizations have been showing a keen interest in assisting the government in this respect, and other desirable or essential institutional infrastructures are being set up.

Public and Private Organizations for Research

Although educational research work in Bangladesh has for a long time, been one of the main functions of the Teachers' Training Colleges and the Institute of Education and Research at the University of Dacca, a wide range of other institutions or agencies are now also engaged in either innovative work or experimental studies or large-scale survey studies. The most notable would include: the Bangladesh Education Extension and Research Institute; the Bangladesh Institute for Development Studies; the Bangladesh Academy for Rural Development; the Bangladesh Bureau of Educational Information and Statistics; the National Foundation for Research in Human Resource Development (NFRHRD); the Foundation for Research on Educational Planning and Development (FREPD); the Institute of Statistical Research and Training at Dacca University; the Academy for Fundamental Education; the Bangladesh Association for Community Education; the Bangladesh Rural Advancement Council; the Institute of Business Administration at Dacca University; the Institute of Social Welfare and Research at Dacca University; the Institute of Food Science and Nutrition at Dacca University; and a number of university departments concerned with the social sciences, mathematics, and statistics.

The names of these agencies provide an identification of their main functions. But they also occasionally conduct educational research studies either individually or in cooperation. All of them also often draw support for educational research from government agencies such as: the Ministry of Education, Ministry of Planning or the other concerned Ministries; the Bangladesh National Commission for UNESCO, the Social Science Research Council, and some of the specialized agencies within Government ministries. In addition, they get occasional support from international or foreign agencies like: UNESCO (including APEID); ILO; UNDP; UNICEF; the Ford Foundation; OXFAM; the Canadian International Development Agency; the Swedish International Development Agency; IIEP (Paris) and so on. Such agencies offer various forms of support including finance, training facilities abroad for professional personnel, professional consultancy services, and procurement of materials and equipment needed for experimentation, innovation,

and development.

Institute of Education and Research, Dacca University

For the remainder of this paper, I would like to describe, in some detail, the functions of the Institute of Education and Research, Dacca University. As the leading associated centre of the APEID network in Bangladesh, this institute has conducted a number of large-scale innovative and experimental educational reasearch projects in recent years. A description of its activities may therefore provide an idea of the current status of educational research in my country and also of the extent of pre-service and in-service training opportunities that are provided for young educational researchers.

The Institute of Education and Research, University of Dacca, is the highest seat of learning in the areas of teacher education and educational research in Bangladesh. The provisions of the Second Statute of the University of Dacca, as incorporated in the Dacca University Order 1973, provide the legal basis for its operations.* The aims and objects of the Institute are:

(1) To promote and to provide facilities for advanced study and research in education;
(2) To provide teaching, training and guidance in order to prepare candidates for the degree of Master of Education and Doctor of Philosophy in education of the University;
(3) To provide courses of further study for those who are already qualified to engage in educational work; and
(4) To provide services for those concerned with higher education in the University Teaching Departments and affiliated or constituent colleges.

The Institute offers professional degree programmes in a number of specializations, such as primary education, secondary education (including social science, curriculum, and languages), educational administration (including planning and management), educational research, educational psychology and guidance, etc. These specializations have been organized under separate departments with provision for inter-departmental cooperation, as and when required. An important aspect of these degree programmes is their emphasis upon research work and thesis writing.

The teaching staff and the students engage in research work which may be classified as: (a) research studies for students' thesis requirements, (b) individual

* Readers may note that a description of the work of the Institute of Education and Research at Dacca University was omitted from an earlier UNESCO-NIER Report because of the political changes then occuring in Pakistan. See, *Educational Research and Development in Asia, Report of a Regional Meeting of Experts*, October 1972, Bangkok/Tokyo, 1973.

research by members of the teaching staff in their respective areas of specialization, (c) departmental research, (d) institutional research of inter-disciplinary nature conducted so far, by selected teams of researchers drawn from different departments of the Institute, and (e) research work done by members of the staff in collaboration with government and other agencies.

In addition to these academic and research programnes, the Institute organizes special seminars and workshops that are often sponsored by the government and other agencies like UNESCO, UNICEF and the Ford Foundation. Most of our staff members have enjoyed the stimulating experience of participating in a large number of national and international seminars, workshops and conferences on various aspects of education and educational innovations at home and abroad. As stated, the Institute is an Associated Centre of APEID under UNESCO. It is also involved at present in a collaborative programme with the University of London Institute of Education, aimedat staff development, the enrichment of expertise through teacher exchange and in collaboration for research work. The staff of the Institute consists of well-qualified persons with higher degrees from reputable universities in Bangladesh, the United States of America and the United Kingdom and India.

The teaching staff of the Institute are also experienced in conducting and guiding basic, as well as applied, research studies into a variety of problem areas in the field of education. Moreover, they have been engaged in such activities since the establishment of the Institute in 1959. Reviewed broadly over 20 years, these studies may be grouped under the following heads:

1) Development of tests for measurement of achievement, aptitude, intelligence, interest, attitude, and other personality traits;
2) Psychological studies concerned with the problems of instruction and learning;
3) Experimentation for improvemont of curricula through changes and innovations;
4) Evaluation of educational services and facilities: and
5) Educational statistics and demographic studies.

While many of the research studies undertaken in this period were conducted to satisfy basic academic interests, others were often sponsored by the government or international agencies like UNESCO, UNICEF, Ford Foundation, USAID, etc., and some large applied research projects have earned a reputation for the Institute. A brief listing of seven large research projects may provide a sampling of such projects, conducted by teams of researchers from the Institute:

(1) **The Education in East Pakistan Research Project, (1967-'70)**: This was a comprehensive survey of education in the country (then part of Pakistan) sponsored by the government and funded by the USAID.

(2) **Population Education in Bangladesh, (1975-'76)**: This involved experimentation with a population education curriculum for classes VI, VII

and VIII in all high schools of two selected thanas to provide a basis for introduction of population education in Bangladesh. It was sponsored by the government and funded by the Ford Foundation.

(3) **Muktangan (Out-Door) Primary Education in Bangladesh, (1976)**: This involved experimentation with an innovative curriculum for primary education to integrate the formal curriculum with activities in the society and world of work. It was a joint project of the Ministry of Education and the Institute of Education and Research.

(4) **Survey of Primary Schools and Evaluation of Primary School Agriculture Programme in Bangladesh, (1975-'76)**: This required an exhaustive survey of primary schools in the country to provide vital information and statistics on primary education. It was sponsored jointly by the Ministry of Education and UNICEF.

(5) **Study on the Relevance of Education for Work and Life in Rural Areas of Bangladesh, (1981)**: This project has been sponsored by UNESCO and is being undertaken by a team of researchers of the Institute. The report of the study is being finalized now.

(6) **Study on Adult Education in Bangladesh**: This is an evaluation of the government's experimental programme in eight thanas sponsored by the Bangladesh National Commission for UNESCO. Having begun in 1979, the third phase of the study is now concerned with the experimental use of follow-up literature for neo-literates.

(7) **Systematic Approaches in Teaching Languages in Primary Schools, (1980)**: This experimental study is funded by the University of Dacca, and was undertaken by a study team from the Institute.

To supplement this selection of seven illustrative research projects at this Institute, the following list of important innovative and research projects conducted by other organizations may help to round out the picture of educational research in Bangladesh which I have been trying to convey. Again, I offer only a sampling of such studies:

(1) **The Situation of Children in Bangladesh, (1979-80)**: This study was sponsored by UNICEF, and has been conducted by the Foundation for Research on Educational Planning and Development (FREPD) which created a research management team from its own experts as well as experts drawn from the Institute of Education and Research, the Institute of Social Welfare and Research, the Institute of Public Health, the Institute of Food Science and Nutrition, the Departments of Biochemistry and Economics, and the Bangladesh Institute for Development Studies. The study was undertaken in an inter-disciplinary manner in order to determine the situation of the child population in respect of education, social welfare and health services offered to them, and also to identify their socio-economic circumstances so that appropriate UNICEF-assisted programmes of service could be drawn up.

(2) **Study on Micro-Planning for Primary Education in Rural Areas for Implementation of Universal Primary Education by 1985:** This inquiry in 1980-81 was sponsored by and received professional support from the Institute of Educational Planning (IIEP), Paris. It is being undertaken by the National Development Group of the Ministry of Education which has formed a study team with experts drawn from IIEP, BEERI, IER, BANBEIS, NFRHRD, BNCU and the Ministry of Education.

(3) **Study on Higher Education and Employment, (1979-80):** This project is also sponsored by IIEP, and it is being undertaken by the National Foundation for Research in Human Resource Development (NFRHD) in cooperation with researchers drawn from FREPD and other organizations. The study is examining higher education programmes in relation to demand for high level manpower in the labour market.

(4) **Experimental Universal Primary Education (UPE) Project in 40 Thanas (Administrative Units) of Bangladesh, (1980-'85):** This project is financed by the World Bank as an IDA project and it is being conducted by UNESCO in association with a large number of expatriate and local consultants, researchers, and other supporting personnel. It is an ambitious and innovative project designed to test the feasibility of a large number of hypotheses and so a variety of innovative educational techniques will also be tested.

Infrastructures for Training Educational Researchers

Clearly the services of different categories of research personnel have been required for the studies already mentioned. While the experts connected with such studies have usually had sufficient academic preparation for research work on which they are engaged, other project staff have either initial pre-service training in research methodology as part of their formal education before recruitment, or no formal pre-service training. In either case, the project leaders and experts provide opportunities for in-service training. Young educational researchers learn the techniques better while engaged in actual projects. Most of the high-level personnel, on the other hand, in the research organizations and institutions mentioned in the previous section, will have undergone different types of training for educational research work as part of the academic programmes in universities or research institutions in Bangladesh, India, the UK, the USA, the USSR and other western countries. At present, the outstanding problem in organizing high-level training programmes for educational researchers arises from the fact that the local universities cannot provide sufficient funds for awarding research scholarships. Hence, potential scholars from Bangladesh are attracted by opportunities offered in universities in other countries which tend to provide more generous financial support to research scholars.

An Illustrative Programme of Training in A University Setting

Once again, to provide a concrete example of a training programme in Bangladesh, I have elected to present a brief description of the opportunities available at the Institute of Education and Research at the University of Dacca.

A. The Requirement for the MEd Degree

The University provides an MEd with specializations already mentioned. The courses are divided into a core curriculum for all students and departmental courses according to specialization. The core curriculum methods are called Research Techniques and Thesis Requirements. A course in Educational Statistics is required for all students whose specialization involves the statistical analysis of problems. A brief description of these required courses follows:

(1) Research Techniques

This course is designed to give students a knowledge of the various methods of gathering information and of procedures of analysis to test hypotheses. The units covered inlcude: the meaning of research, the selection of a research problem, the use of reference materials; historical, descriptive or experimental research; the tools of research; the interpretation of data; and the preparation of a research report. Each student will be expected to select and organize a research study.

(2) Educational Statistcs

The course in statistics is designed to develop sufficient understanding of statistical analysis to enable the student to undertake an educational research study.

(3) Thesis

Attendance at the course in Research Techniques is a pre-requisite and a finished course in thesis preparation requires completion of a basic research study, a creative project, or applied research, supervised and directed by an advisor. The satisfactory completion of the course requirement should thus provide evidence that student is capable of conducting an educational research study and of writing the research report in acceptable language and form.

In addition to these basic courses a number of research seminars are held in each department and the student is required to participate in them and make necessary contributions.

B. Requirement for the PhD Degree: Regulations Concerning Research

The Institute of Education and Research requires that each candidate for the

degree of Doctor of Philosophy in Education shall, with the approval of his advisor, propose to his Internal Examination Committee a topic for this research and present to the Committee an outline of the proposed research for its approval. When approved, the outline must be filed with the Acadmic Committee. The approved research must be in the area of his major studies and it will culminate in the writing of a thesis on the topic based on the research. The research must be of sufficient scope to promise a worthwhile contribution to the educational knowledge and literature. Both the research and the thesis must be defended by the student in an oral examination before the Internal Examination Committee.

An External Examination Committee, consisting of the Chairman of the Internal Examination Committee and two external members, appointed by the Academic Council of the University on the recommendations of the Committee of Advanced Studies in Education, shall examine the thesis and report of its findings.

Taught Courses

In addition to the research and thesis writing requirements, a PhD student at the University of Dacca is required to take taught courses in the area of his specialization. By way of illustration, a few of the courses in educational research may be described as follows:

(1) Introduction to Statistical Research

The purpose of the course is to help students develop skills in analyzing classical studies in educational research, to identify, delimit and define educational problems, to formulate actual research designs, and to apply such skills in research problems of education.

(2) The Language of Educational Research

One of the purposes of this course is to acquaint students with the terminology of educational research, and to emphasize the semantic problems in qualitative and quantitative studies. Students will also develop skills in abstracting, in compiling bibliographies, in making critical reviews of bibliographical resources, and in writing research reports.

(3) The Statistics of Educational Research

This course is designed to develop an understanding of various statistical methods and approaches to be used in the statistical design of educational research and analysis of findings and their application in practical situations. The course is intended to help students understand the basic principles of statistics and the variety of statistical techniques for analysis of educational problems.

(4) The Methodology of Educational Research

This course provides an understanding of a practice in various research methods. Students become familiar with modern electronic and mechanical data processing techniques.

(5) The Practice of Educational Research

This course enables the student to develop skills in doing independent research work of higher quality by involving himself in independent reading and research work along the lines of his own interest areas. It provides opportunities for group discussion, practicums and seminars.

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The purpose of this paper has been to provide a quick introduction to the context in which training for educational research occurs in Bangladesh. In general, it avoids extensive documetation and quantitative detail in the numbers of young researchers trained. By focussing on the Institute of Education and Research at the University of Dacca, the author offers an invitation to interested readers to direct inquiries for further information on these matters directly to him.

PAKISTAN SETS AN EXAMPLE
—Preparing Women for Research in Education—

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Introduction

Research in the field of education is a new phenomenon, and it is only very recently that educational research has been undertaken at a national level. Just 25 years ago, in Pakistan's First Five-Year Plan (1955-60) to appraise and reform its education system, it was pointed out that the lack of educational research was a serious gap in the programmes of the country's teacher training institutions. This plan proposed that each university should be encouraged to develop and strengthen a faculty or a department of education for preparing students for master's degree in education. It also proposed that institues of educational research be established.

In Pakistan today, we have institutes of education and research at the Universities of Sind, Gomal and Punjab, an institute of education at Peshawar University and a department of education with strong interests in research at the University of Baluchistan. In addition, the National Research Centre at the Allama Iqbal Open University, the Pakistan Institute of Development Economics at Qaidl-Azam University, and the National Institute of Psychology in Islamabad, are all important national bodies. Perhaps, in high-lighting a theme in this paper, I may also mention that the Research Cell of the proposed women's university currently located at Allama Iqbal Open University is also a significant innovative institution. It is very much concerned with research and policy studies on the education and employment of women.

To provide a focus for a discussion of the training requirements and opportunities in Pakistan it may be helpful to concentrate attention here on educational research (1) at the National Institute of Psychology where I have been a member of the staff for five years and very much preoccupied with studies of women and female education, (2) the implications for training at the proposed Women's University in Pakistan, and (3) the wide variety of UNDP, APEID-Unesco, World Bank and other international programmes in which Pakistan is involved which bear upon training requirements.

Educational Research at the National Institute of Psychology (UNDP Project)

The National Institute of Psychology was founded in 1976 primarily because there were few institutions in Pakistan staffed to carry out research on child development and school-related issues. As we know, a great deal of basic research on children in various settings is needed to provide the proper foundation for curriculum development and evaluation. The need to measure the achievements of students, to analyze their pattern of growth and learning difficulties is evident. The Institute will try to fill this gap.

The methods now being used to measure achievement do not yield very useful information about the learning process, or the curriculum or the efficiency of class teaching. The type of testing being used at present encourages children to reproduce isolated facts and items from their memories. Rote learning is rewarded, but skills, understandings and the acquisition of positive attitudes is often ignored.

The Institute will therefore focus initially on the study of cognitive development, and move from there into the development of appropriate measures of achievement. It will conduct an analysis of the primary school curriculum to clarify whether its learning objectives are consistent with the developmental stages of various age groups and the cultural context in which children live. The research in this area should evaluate the relative importance of a number of factors affecting the educational attainment of children, such as parental attitudes toward schooling, the attitudes to the community, the child's perception of the school, the teachers and so on. Studies are needed which will reveal the effect of using different languages on school learning and so on.

Objectives and Prospects

The aim of the national education policy accepted for 1979-83 is to provide free and universal education by 1987 for all children in Pakistan for eight years. This objective will be achieved in phases, and foreshadows the training of 225,000 additional teachers, retraining most of those already employed as teachers, revising the school curricula and related materials of instruction, ensuring educational access of girls and providing educational services for the handicapped. The immediate objectives of the UNDP Project have been:

(1) To strengthen the potential of the National Institute of Psychology in educational research on primary children;

(2) To formulate research designs for six studies related to school achievement; and

(3) To develop strong professional links between the Institute and other organizations in Pakistan concerned with educational research.

As illustrations of the ways in which these objectives have been implemented, the following studies have been set up and promoted:

(a) Cognitive development of Pakistani children, 1979.
(b) Children's perceptions of parents, teachers and peers in schools as variables influencing learning and tendency to drop-out of schooling, 1979.
(c) Analysis of the primary school curriculum in the light of the cognitive development of children in Classes I and II, 1980.
(d) Attitudes of parents, teachers and community toward the school and child's performance, 1980.
(e) The use of different languages for instruction as a variable influencing congnitive development, 1980.

Let me illustrate a little more precisely how projects of this kind have been advanced.

A. Case Study No. 1: A Study of Cognitive Development of Primary School Children of Pakistan[1]

This study set out to test children of ages five to fourteen on Piagetian tasks in order to find out whether Piaget's assumptions are valid for Pakistani children. The research design called for a sample of 120 subjects from each province, and a total of 480 subjects from four provinces who were to be studied over a period of two years. The sample called for selecting ten subjects, each at the ages five, seven, nine, eleven and thirteen from urban populations and twelve each from rural populations. (The number for rural populations was more due to greater mobility in rural areas). The Piagetian tasks like seriation, classification and conservation etc. had to be administered after approriate adaptions. The test battery had to be administered after an interval of six months.

The difficulties encountered included first the problem of determining the correct ages of children, so eventually grade levels had to be used instead; secondly, there were problems in choosing test materials and tasks that were not discriminatory between urban and rural children and which reflected common experience in use of clay, dough, toy animals and so on; thirdly, native speakers of various languages had to be given training to work in research teams for different language groups. In brief, research designs often have to be modified under the constraints of local conditions or the validity of our data is at risk.

B. Case Study No. 2: Psychological Profile of Rural Women

This is a pioneer study in the field of psychology in which personality make-up of rural women is being studied. It was assigned to the National Institute of Psychology by the Cabinet Ministry, Women's Division. The statement of

1. Muhammad Parvez, *Cognitive Development of Pakistani Children*, National Institute of Psychology, 1981.

objectives reads, "Fundamental to any programme of social development, is the need to understand the target group closely and accurately. The study of rural women is important because they represent the most neglected sector of society and many of the welfare programmes aimed at improving their educational and economic status have not been as successful as desired. It is hoped that as its outcome we will have more intimate knowledge about rural women".

The research design has called for participant observation in collecting the initial information for development of research tools. Later on, the data was collected from all of the four provinces on the following aspects of the personality:

(1) Self Concept;
(2) Achievement Motivation;
(3) Aspiration Level;
(4) Ability to Understand One's Problems; and
(5) Drive to Improve One's Lot.

This study is scheduled to be completed by December 1981 and it is now in its final stages of data analysis. The problems encountered in carrying out this study have been enormous and I would like to list them as encountered.

1) *Sample Size:* Due to absence of base line bata about Pakistani women, especially regarding their personal characteristics, the study had to be detailed and comprehemsive. Therefore we had to pick a very, very small sample of representative villages from different parts of Pakistan and sacrifice the advantages of the bigger samples.There were many factors acting as constraints, namely, reluctance of women to express their views, illiteracy, lengthy interview sessions required for each test, the money and time available for the study.
2) *Research Tools:* We also quickly discovered there were no single tests suitable or available for use in this study. The research team therefore had to go through the difficult task of collecting observational data and building the tests and finally using them. This whole process not only called for extra effort on the part of researchers but was quite expensive and time consuming. The research team spent seven months in developing these tests before they were ready for use in the main study.
3) *Regional Languages:* It is not only the regional dialect which causes difficulties but it is the regional culture also which has to be properly accommodated in a research design. To give a simple example of the connotation of a word "Bahadar"(brave), if used for a man it connotes physical strength and courage, but if it is used for a woman it connotes her ability to face adverse circumstances. One can imagine how difficult it must have been for the researcher to develop the list of objectives for the self concept test and select stories for measuring achievement motivation.

C. Case Study No. 3: The Introduction of Guidance Services in 50 Schools of the Islamabad School District

This two-year pilot project has been sponsored by the Federal Ministry of Education and the implementing agency has been NIP. The innovative idea in this report is how the training of the school counsellors may be handled.

After the selection of teachers who were going to act as part-time counsellors they were given three weeks training in a workshop situation. They were taught how to develop student's inventories, administer tests and write case histories, etc. Later on, all of them returned to their jobs but were required to attend fortnightly meetings with the senior psychologists in small groups for the entire duration of the project. Each one of them was asked to bring two case studies with him or her and present it before the group. These case studies were discussed in these sessions either by role playing or presenting them before the group for discussion. In addition continuous on-the-job training was provided in these meetings through lectures, films, and sharing of technical information. As a further help two full-time trained guidance workers were spending one half day each week in every school, to help and support the activities of the teacher counsellors.

It was felt that this continuous contact with the teacher counsellors and support from the trained counsellors was very useful and the teacher counsellors performed much better than trained counsellors who did not attend these meetings. The group developed a sense of affiliation and a drive to learn. Also the new counsellors felt more secure in working with children having emotional or social problems as they could readily consult the experts.

Training Contexts

These case studies and illustrative project targets may suffice to indicate the many varied situations or tasks for which training is required within the UNDP programme administered by the National Institute of Psychology. At the broader level this training has been assisted by a series of programmes:

(1) The employment of consultants, each on three month assignments, to provide leadership and direction in four key areas of research methodology, cognitive development, psychometrics and social psychology.

(2) Provisions for seven members of the Institute's staff to be trained abroad or at home.

(3) Four fellowships of nearly two-year duration for the senior members of the staff working on the project.

All told, the programme has been implemented by a professional staff of 11 with a supporting staff of 35, and the respective roles of national and international staff has been determined by its leaders from the outset of the project. The project is also subjected to periodic reviews in accordance with the policies and procedures

established by the UNDP for monitoring the project and programme implementation. The final report on all this work is due in January 1983.

Establishing a Women's University in Pakistan

The aim of this proposal is to ensure that the women of Pakistan play a creative and constructive role in national development, and to achieve this objective the scheme under consideration is for a Board of Trustees to be established in Islamabad to plan, control, and administer education for women throughout the country.

In creating an institutional context, it is proposed to begin by developing the Home Economics Colleges in Karachi, Lahore, Peshawar and one Arts and Science College at each of these places, and also at Quelta and Islamabad, into institutions of higher learning of university status. These professional university colleges, severally or singly, will develop specialized institutes of home economics, food technology, textile technology, electronics, pharmacy, health studies, education, industrial arts and architecture, physical education, Islamic studies, business administration, communication sciences, linguistics and languages.

In order to spread the expenditure over a number of years, it is proposed that this scheme should be implemented in three phases, each phase spreading over a period of about three years. During the first phase the present colleges of home economics, and the departments of textile, food and nutrition will be strengthened. The second phase will see the establishments of an Institute of Business Administration at Karachi, Institutes of Islamic Studies and Electronics at Lahore and an Institute of Pharmacy at Peshawar. The third phase will be earmarked for the establishment of an Institute of Communication Sciences at Karachi, Institutes of Industrial Arts and Health Studies at Lahore and an Institute of Education in Peshawar.

Now, as already stated, the establishment of a research centre at the University is a key element in this whole plan. Its task will be to undertake inter-disciplinary studies for planning, promoting and evaluating women's education. It will be expected to conduct evaluative studies on the Institutes and on other educational programmes for women and to study and define more clearly the role of women in the development of Pakistani society. This centre will also develop learning and teaching materials for women's education throughout the country. It will also embark on studies of the needs of special categories of women, such as the gifted or the handicapped, and formulate appropriate plans for meeting their needs. Therefore, special circumstances need to be taken into account in developing training programmes in educational research for women and women's interests so that circumstances will be receiving particular attention in Pakistan in the years ahead.

Administratively, this expansive concept will be directed by a Board of

Trustees responsible for planning and controlling the educational programmes at university colleges with a woman vice-chancellor to be appointed by the President who will be the chancellor of the University. Each University Centre will have a Dean. At a centre where there is more than one University College, one of the Deans will be designated as pro-vice-chancellor and responsible for administration and control of the colleges at the centre.

Content of Broader Social Policy

It should not be assumed that the idea of Women's University in Pakistan is an isolated or single illustration of national policy. It is indeed, simply one example of a general emphasis bringing into sharper focus the role of women in educational research in the years to come. The trend may be demonstrated further by the following examples.

A. Women's Welfare Centres

The Provincial Social Welfare Department has set up as many as 40 centres in different towns and villages of the Hyderabad Division for the welfare of poor and needy women. Of these, 20 centres have been established on a self-help basis and the remaining 20 with the assistance of the Women's Division. In these centres, poor women are introduced to training in adult education, sewing, knitting and cooking.

B. Allama Iqbal Open University

This university has developed a comprehensive national programme especially for the education and training of girls and women to be launched in the next two years. This has been identified indeed as an important outcome of its research and development activities.

Allama Iqbal Open University has also stepped up its efforts to enrol women students under a special directive of the President of Pakistan. In a high level meeting of the officials of the Government of Pakistan and the University early in 1981 the various aspects of women's education were discussed. It was agreed that as Allama Iqbal Open University specializes in distance teaching it is well placed for providing education, both general and functional, to the women living in remote areas where either facilities for such education are not available or the local customs do not allow women to attend the educational institutions. In accordance with the directive of the President and the decisions of the committee a comprehensive programme for women of all educational levels was therefore mapped out.

The educational programme for illiterate adult women for instance has been

planned at three levels. The first phase is basic literacy, numeracy, health, hygiene, handicrafts and home and farm based skills. This level will enable the women to get goal-oriented education up to primary level. The second phase is roughly from 6th to 8th grade level schooling, whereas the third phase will bring the students up to matriculation level. In addition to these three programmes, skill training courses for literate women have also been planned for women. These include training women as teachers of primary schools, day care and nurseries schools, health workers and agriculture extension workers. Some skill-oriented courses like secretarial practice, front office management and cashier courses etc. are also part of the package. The student is free to enrol for a single course like typing and shorthand or take a full array of the courses to qualify for a certain vocation.

As Allama Iqbal Open University already has all its courses open for women students, an effort is also being made to add new courses which may be of special interest to women, e.g. food and nutrition, child care and development, selling of home made products, maintenance and repair of home electrics, kitchen, gardening, etc. At post-graduate level the courses like women and development and women in Islam are being added.

C. Women in Science and Technology

Following on from a recent four-day national conference in Quetta about women's participation in the development of science and technology, the following recommendations about the role of women in Pakistan are of considerable interest:

(1) The research cell of the Women's Division should conduct surveys and assemble statistics on women science graduates and women engaged in science and technology.

(2) Day-care centres should be set up at appropriate locations to enable working mothers to contribute to their professions.

(3) Recognition of women scientists and research should be achieved through the *mass media*.

(4) There should be appropriate representation of women on scientific delegations sent abroard, along with representation in UN agencies and other bodies for the development of science in Pakistan.

(5) A campaign for the popularization of science among the masses should be undertaken throughout the nation by a task force of women in scientific and technological fields.

(6) A network of vocational and polytechnical schools should be established for women.

(7) Universities and their employees should be approached by the Women's Division in order to encourage participation by qualified women in non-conventional areas of science and technology.

EDUCATIONAL RESEARCH ON A CONTINENTAL SCALE
—The Example of India—

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Introduction

With a populatsonthion exceeding those of all the nations of Latin America, or all the African nations south of the Sahara, almost all generalizations about educational research in India are over-simplifications. Its education system is vast and varied and the different states of the union have important influence upon its financing, organization and accountability. There is a sense then, where any adequate analysis of the state of educational research in India would require a state-by-state enquiry.

Until 30 years ago educational research in India was confined to a few universities and teachers colleges. Within 25 years of independence, however, the number of universities granting research degrees in education has increased 16 fold. The Government of India was quickly impressed with the potential value of research and systematic development in promoting both reform and an expansion of education, and in 1961 it established the National Council for Educational Research and Training (NCERT). The education ministers of each state serve on the governing board of this Council, presided over by the Union Minister of Education. It has a staff of more than 2,000, and maintains four regional colleges of education (Bhopal, Mysore, Bhubaneswar and Ajmer). It also works closely with universities and with central and state goverments to ensure that a coordinated approach to research and development is achieved. In addition, it has also had an important role in helping to prepare the national five year plans for educational development.

Nowadays, there are many other centres for educational research in India. Several special institutions have been created to deal specifically with language teaching, for instance, state institutes of education have been established in most states to deal with research on elementary education, thirteen states have state institutes of science education, several have bureaux for educational and vocational guidance some of which deal with research into educational measurement, and a limited amount of research is also undertaken in the technical teacher training institutes.

Three examples may suffice to illustrate the distinctive programmes of such centres or institutes:

(1) The Centre for Advanced Studies in Education (CASE) at the Maharaja Sayajirao University of Baroda was established in 1963. Its objectives are to analyze the problems of education and to plan programmes of research on a priority basis, to provide facilities for researchers in the form of expert consultancies, to train research workers, to act as a clearing-house and to disseminate research knowledge. It has a staff of about 50 full-time research workers, 30 or more from other parts of the country participating in its work, and it has about 60 candidates for doctoral degrees, concentrated mainly on teaching and teacher education, innovations, educational change and educational technology.

(2) The Central Institute of Indian Language (CIIL) in Mysore was established by the Government of India in 1968. Its main function is to assist the Government in language planning, to develop new methods and materials for teaching Indian languages and also to train teachers. It has about 30 individuals on its research staff and has carried out many linguistic surveys in tribal communities. It has a special psycho-linguistic unit to undertake basic research into language development, language teaching and language evaluation techniques.

(3) The Central Institute of English and Foreign Languages at Hyderbad, (and various regional and local institutes) have specialized in the teaching of English to Indian students with different linguistic and cultural backgrounds. It also conducts courses in major international languages including Arabic, French, German and Russian. Its major function is to conduct courses for teachers of English, prepare books for use in Indian schools, and develop instructional materials, particularly for use by radio.

This brief introduction may explain why some foreign observers have recently judged the climate for educational research in India to be good.[1] A tradition of scholarship, publication and public debate, a relatively open political environment, a large number of researchers to provide motivation and comment, fair prospects for funding, and an increasing demand for research through the past 20 years, it is said to have created a favourable environment for educational research.

Priority Areas

There are three major sources of funds for educational research in India, drawing upon public funds. These are the National Council for Educational

1. Myers, Robert G., *Connecting Worlds—a survey of developments in educational research*, International Development Research Centre, Ottawa, 1980.

Research and Training (NCERT), the University Grants Commission and the Indian Council for Social Sciences Research. Of these, NCERT is the most comprehensively responsible and has established a special committee, known as the Educational Research and Innovation Committee (ERIC) to consider proposals, and to approve and provide funds for educational research. This committee has set up three areas:

1) **Problems relating to the provision of free and compulsory education for all children up to the age of 14 years.**
   Any research programme or innovation which promises to help or clarify how to extend the education of girls or the weaker sections of the community, especially the scheduled castes and tribes is to be welcomed. The aim is to decrease the drop-out rate and increase the holding power of the schools, but research into ways of teaching out-of-school children, or on how to counteract the effects of deprivation in the early life infants is to be encouraged.
2) **Problems in ensuring that education becomes more relevant to the socio-economic needs of the country.**
   This may include research into ways the existing educational structure and content could be modified to promote economic growth and social change, and includes provision for research on education and social mobility, studies in educational finance, supervision, administration and planning.
3) **Problems of curriculum development for rural and urban children.**
   Studies may be undertaken of abilities of rural (tribal) as well as urban children and their relation to curriculum, distance communication systems and rural education. Studies may also be conducted on the problems of first-generation learners and how far the schools are meeting the needs of children of relatively weaker sections of the society.

Monitoring of Research

Generally speaking, the documentation of educational research in India has also made very considerable progress in the past 20 years. In part, this has been stimulated by the leadership of the Indian Council for Social Sciences Research (ICSSR) which has now completed a 23-volume survey of research in the social sciences. One of the volumes is devoted to education and the surveys in economics, sociology, anthropology, and psychology all contain chapters on those disciplines, as applied to education. Moreover, a data base for educational research exists in the survey of education carried out every five years, covering all aspects of the Indian system. But it has not always been the case.

For a long time there was no publication which gave an account of research conducted in India. To begin NCERT published a list of dissertations at the MEd and PhD levels up to 1961, under the title *Educational Investigations in Indian Universities (1939—1961)*. This was followed by a mimeographed supplement

which contained the titles up to 1966. Then, the Indian Council for Social Sciences Research (ICSSR) started a publication, *Indian Dissertation Abstracts*, in which abstracts of PhD theses in social sciences are published. In 1974, the Centre for Advanced Study in Education (CASE), Baroda brought out a publication, *A Survey of Research in Education*. It gives more than 700 abstracts of research in education, 462 PhD studies and 269 institutional projects, which had been completed up to 1972. The survey covers a period of decades and gives abstracts of researches conducted in Indian Universities, NCERT, State Institutes of Education and over 400 Colleges of Education. Apart from departments of education in universities, other departments like that of psychology, sociology, economics have also undertaken research on educational topics. These too have been abstracted. The abstracts have been grouped under sixteen heads like 'Philosophy of Education', 'History of Education', and so on. Each major head first gives a trend report. This is followed by abstracts.

In 1977, a second survey was undertaken and it was published in 1979 under the title, *Second Survey of Research in Education*. It covers the period from 1972 to 1978 and gives abstracts of 806 studies.

A third survey is under preparation.

The NCERT also publishes a quarterly journal entitled *Indian Education Review*, which gives abstracts of PhD theses. The *University News* published fortnightly by the Association of Indian Universities gives a list of doctoral theses accepted by Indian universities under the caption 'Theses of the Month'. A quarterly journal, *Indian Psychological Abstracts* gives summaries of research papers in psychology.

Some thematic publicatiens are also making their appearance. One such publication is *A Decade of Population Education Research in India* by D. Gopal Rao which has been published by the NCERT in 1980. It gives a summary of 49 studies. The booklet gives an overview of research in population education, the gaps which have been left unfilled and promising areas for further research. R. S. Devi has published *Research on Indian Adolescents*. M. K. Raina has published *Creativity Research: International Perspective*. It gives an overview of research in creativity in 19 countries. The book has been published by NCERT, in 1980.

A recent development in technical education has been the establishment in 1965 of four Technical Teachers' Training Institutes located at Chandigarh, Bhopal, Calcutta and Madras. The Bhopal institute has brought out a publication, *Survey of Research in Technical Education*. The researches have been conducted mainly in the four institutes and a few polytechnics. The survey gives abstracts of 83 studies dealing with teacher-student characteristics, curriculum, teacher training, communication which refers to teaching of English, teaching-learning process, examination and testing, and educational management.

All told, there are nearly 100 journals in India devoted to expanding educational knowledge, and several are in local languages. In addition to the *Indian*

Educational Review, mentioned above, both the *Journal of Higher Education* and *New Frontiers in Education* already enjoy a considerable international reputation. In recent years the National Council for Educational Research and Training (NCERT) has been experimenting with less scholarly journals in an effort to disseminate results to the 2 million teaching practitioners who are its concern. Publication and communication is thus a matter of special interest to research workers in India.

Training in Research Methodology

In India training in research is given at the MEd (Master of Education) level. Students who join MEd have previously done BEd, but the BEd course is mainly meant for preparing teachers for schools. Both BEd and MEd courses are each of one academic year duration. At the BEd stage, an introduction is given to observation, case study and experimental methods and in some universities, action research also included. Elementary statistics is also taught. But practical training in research is not given at the BEd stage. At the most, students may be asked to carry out a case-study which would give them some idea as to how to conduct interviews, administer psychological tests and collect or interpret relevant data.

At the MEd stage there is a compulsory paper on Methods of Educational Research and Statistics. About four hours per week are devoted to the teaching of this paper. Though students have already studied some statistics at the BEd stage it is again taught from the very beginning in the MEd class. Due to limited time at the disposal of the teacher the statistics course does not cover many important topics and this is one of the weak points of training given at the MEd level.

Each student at the MEd stage is required to write a dissertation on some educational problem and his investigation will usually be of such a nature that he will be obliged to do some field work. He thus gets some training in formulating research hypotheses, method of sampling, using psychological tests, analysis of the data and testing of hypotheses.

One of the most difficult problems that a student has to face is the selection of a suitable topic for his dissertation. As is to be expected, in a large country, many subjects have already been investigated in scores of theses. Usually topics and research proposals are discussed in a weekly seminar, in the presence of the concerned staff members and after the topics have been finalized the student is able to go ahead with his work under the guidance of a staff member. However, practices in this regard differ from college to college. In the Baroda University which has a strong research tradition, as it is the location for the National Centre for Advanced Study in Education, planned research, both at the MEd and PhD level is organized so that different aspects of a topic are allotted to different students. Thus valuable contributions in this University have been made in the areas of microteaching, programmed learning, organizational climate, leadership behaviour

and teaching methodologies.

In some universities, the Master of Philosophy (M Phil) courses have been iotroduced. In these on advanced methodology of research and statistics include topics as experimental design and replication and factorial analysis are taught. The students have to offer one topic for a masters' level dissertation and they may continue the work on the dissertaion for their PhD thesis.

In institutions which have the semester system it is a two semester course. In others it is a one year course. In the Meerut University, for example, during the first semester, there are two compulsory papers:

(1) Research Methods in Behavioural Science; and

(2) Educational Statistics and Development of Research Tools.

The papers are of advanced level and also of applied nature. Candidates are supposed not only to study the theoretical part of the course, but also to develop some tools with reference to their research and also to prepare research articles and complete practical assignments.

In the second semester, out of 12 papers on such subjects as Teacher Education, Educational Administration, Foundations of Education or Educational Technology, etc., candidates will be expected to offer two papers more specifically related to their PhD work.

In choosing a research thesis, the selection and finalization of the topic is made under the guidance of a staff tutor and it has to be presented before the staff of Academic Committee and also the external examiners for their approval. Besides the theoretical course of study, candidates have to participate and organize seminars, workshops, etc., and present papers specially related to their research work. The mode of evaluation is thus both external and internal.

Recently, the Institute for Advanced Study in Education at Meerut University has also started an MPhil Correspondence-cum-Contact Programme, for inservice college lecturers. The Central Institute of Education, Delhi is also conducting an MPhil course. This course has three groups. The students are required to opt for one of the methodology papers in Group A, one of the stages of education in Group B, and two papers from Group C.

In Group A the papers are:

(1) Research Methods in Education;

(2) Historical Research and Documentation Study;

(3) Descriptive Research; and

(4) Ex-Post-Facto and Experimental Research and Design.

In Group B the student has to offer development and organization of education at any one level of:

(1) Pre-primary and Primary;

(2) Secondary; or

(3) Higher Education.

In Group C there are ten options dealing with different aspects of education

such as the psychology of learning and instruction, mental health, economics of education, education and communication, advanced educational statistics, and so on.

For the purposes of illustration, the scopes of two of these groups only, are summarized here.

Group A: Ex-Post-Facto and Experimental Research and Design

1) Ex-post-facto and experimental research; laboratory experiments and field experiments. Ex-post-facto and experimental researches reported in the last two issues of the Journal of Experimental Education and Indian Journal of Psycholgy just preceeding the examination. Experimental and ex-post-facto research as differentiated from other types of researches. Use of sociometry, semantic differential, Q-methodology in ex-post-facto and experimental research.
2) Statistical methods used in ex-post-facto and experimental research
   (1) Factor analysis: P,Q,R,S and T techniques. radex analysis, principal factor solutions, orthogonal and oblique factor analytic rotations; quartimin, varimax, equimax, oblimax, biquartimin, binermamin, promax, maxplane. Understanding of computer processed data. Understanding of higher order factors. Factor scores.
   (2) Multiple correlational techniques including discriminant analysis.
   (3) Pre-true, and quasi experimental designs: Latin, Graeco-latin and factorial designs, confounding-nesting designs, designs with nesting and crossing. Analysis of covariance with randomized groups design. Friedman two way analysis of variance. (The objective of including statistical methods given above is to ensure students obtain an understanding of computer-processed data and an insight into the statistical procedures to be follwed in particular situation. Computations are not expected in this paper).

Group C: Advanced Educational Statistics

1) Measurement
   (1) Definitions of random error and true score and the equations derived therefrom. The concept of parallel test.
   (2) Errors of measurement, substitution and prediction.
   (3) Effect of test length on mean, variability, reliability and validity of a test.
   (4) Effect of group heterogeneity on test reliability and validity.
   (5) Item analysis. Tests: speed and power tests. Item homogeneity and test-reliability.
2) Selection and prediction
   (1) Calculation of the inverse of a matrix.
   (2) Setting up a multiple regression equation. Wherry Dolittle and Aitken's

pivotal condensation methods.

(3) Differential prediction.

(4) Discriminant function and analysis.

(5) Computational problems related to various designs given under 'Statistical methods used in ex-post-facto and experimental Research' in Paper I.

3) Calculation of principal factors. Analytic rotations: quartimax, varimax and equimax. Calculation of factor scores and higher order factors.

4) Scholastic models for learning.

5) Non-parametric methods: Chapters 7, 8 and 9 of Siegel's Book.

Nearly 20 years ago, in 1963, the National Council for Educational Research and Training started one of the first advanced research methodology courses, of one academic year's duration. It continued up to 1967, when associateship courses were started and in this, research methodology has appeared as a special field. At present, NCERT continues to organize mainly summer courses on research methods and test administration.

Preparation of Modules for Training in Research Methodology

In India, some work has also begun on preparing research training modules. The Centre for Advanced Study in Education, at the University of Baroda for instance, has taken up a project for this purpose which has been sanctioned by the University Grants Commission. The work on the project began in February 1981 and the validation of the modules is to be undertaken with the cooperation of 40 researchers.

At the Technical Teachers Training Instiute in Bhopal, Dr Marma: Mukhopadhyay has also undertaken the preparation of research training modules and identified the following competencies to be developed in each module.

(1) Selecting and stating the research problem;

(2) Reviewing research literature;

(3) Formulating research hypothesis;

(4) Choosing research designs;

(5) Determining sample for research;

(6) Choosing research tools;

(7) Choosing statistical techniques for data analysis;

(8) Computing statistical operations;

(9) Using computer and computer programmes for data analysis;

(10) Developing research proposals;

(11) Conducting action research; and

(12) Writing research reports.

For each of these competencies at least one module is being prepared. But for (4), 'Choosing research design' and (6), 'Choosing research tools' several modules are

being prepared. Five modules have been prepared so far and they have been tried out on students and teachers. The complete package is targetted to be completed by the end of November 1982.

RESEARCH AND PLANNING IN NEPAL
—An Example of Rapid Development—

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Background: A Short History of the Educational System

In ancient Nepal, education was related to the two main religious movements prevailing at the time, namely, Hinduism and Buddhism. These religions created two different systems of education, an Aryan-Sanskrit system, and a Buddhist system of monastery education.

The first was based upon the Vedas. It was imported by Hindu priests and only Hindus of high caste were eligible for it. The teaching in this system was provided in one-teacher institutions in which a group of students lived with their teacher in a hut near a jungle throughout their careers as students. There are still a few sanskrit schools in Nepal which maintain the distinctive features of this system to this day.

The second type, that is, the Buddhist system of monastery education, was intended in the beginning for the Buddhist monks only. However, it was later opened to other people and so this system appeared to be more democratic than the Aryan-Sanskrit system. It may also be observed to this day in the Gombas (another name for monastries) which remain along the northern border of Nepal.

Both of these education systems have therefore existed for centuries. The modern school system of Nepal has been developed only recently, since the end of the nineteenth century. Its beginnings go back only to the establishment of British rule in India and the setting-up of an English system of schools in Nepal. Until 1918, for example, high school graduates from Nepal were obliged to go to India for higher education as there were no provisions in their own country. But in that year, the first college, named Tri-Chandra College was established, affiliated initially with Calcutta University and then Patna University, both in India.

Following upon a radical change in government in 1951 many more high schools and colleges were opened. In the 20 years which followed Nepal increased the number of its primary schools more than 20 fold, its secondary schooll 100 fold, and it opened 49 institutions of higher learning apexed by a national university. At an early stage in this dramatic development it was realized that higher education would not develop satisfactorily if it remained under the control of foreign universities, and also that no provisions were being made for post-graduate studies

within the country. In 1959, in response to these needs, the Government enacted legislation setting-up a national university named Tribhuvan University.

With the establishment of the university, all colleges previously affiliated to Patna University were now linked to Tribhuvan University. Under its initial statutory provisions, the university was initiated with the faculties of arts, science, commerce and law; at that time, the importance of a university-based system of teacher training was not appreciated by the planning authorities. But this realization came later and a faculty of education was added to the university.

The expansion of the total system was so rapid, disproportionate and inadequately linked to national realities that it soon created many problems. The enrolment patterns were not helping to produce the manpower needed for national development. The curricula and the texts used in the schools had been imported and had not been evaluated or revised in a national context. Objectives and targets were not clear and so the need for changes in the education system from primary to higher education became widely recognized. During this period, many committees were set up to look into the problems of education in Nepal. Two of the most notable of these committees were *Nepal National Education Planning Commission* of 1954, and the *All-Round National Education Committee* 1961. In addition, a Specialist Unesco team, Hugh B. Wood and Bruno Knall (1962) also made an important contribution to the study of Nepalese education at this time.

To utilize the educational output of Nepal effectively, as the essential investment for national development, social reconstruction, and political advancement, and against the background of the recommendations of the above committees, a National Education System Plan for 1971-76 (NESP) was then prepared and promulgated as a basis for manpower planning. This Plan assigned the task of developing higher education to Tribhuvan University.

Accordingly all colleges and training institutes in the country were brought under its direct administration. It has also established several research centres. At present there are 10 institutes and 4 research centres within the jurisdiction of the university. The ten institutes promote the development of agricuiture and animal science, forestry, engineering, medicine, science and technology, education, management, law, humanities and the social sciences; and sanskrit. The four research centres are as follows:

(1) The Research Centre for Applied Science and Technology;
(2) The Research Centre for Economic Development and Administration;
(3) The Research Centre for Nepalese and Asian Studies; and
(4) The Research Centre for Educational Innovation and Development.

Within the National Education System Plan, the Ministry of Education is responsible for the development of all sectors of education (other than higher education), that is for primary, lower secondary, secondary, adult education and so on. The Ministry has therefore reorganized its structure and established separate sections for each of these sectors. In addition it has created Programming, Planning

and Evaluating Divisions with considerable standing and status. Most of the activities undertaken by these Divisions are related to educational research and development[1].

Impact of Research

The National Education System Plan in Nepal may thus be regarded as the culmination of a series of research undertakings which began in 1954, when his Majesty's Govenment of Nepal appointed its first National Education Planning Commission. Since that time numerous surveys, investigations and evaluation exercises have been completed, published and utilized as a basis for achieving a speedy and effective implementation of the Plan. Indeed, it has been the success of an elaborate programme for detailed surveys of education facilities and progress in most of the districts of the Kingdom which has helped the Government, as well as the private sector, to realize the importance of good research[2]. As a result new research centres have been established.

1. Research Activities in the University

Within Tribhuvan University, research activities are carried out in institutes mentioned above, in the Planning and Research Division, and the Curriculum Development Centre as well as in the specialized research centres. To provide an overview of these contexts for promoting research, their main purposes may be summarized as follows:

1) **Research Centre for Applied Science and Technology**

This centre is primarily concerned with the improvement and generalization of technological capability, utilizing science and technology for the development of the country.

2) **Centre for Economic Development and Administration**

The main objectives of this centre are to provide facilities and to conduct applied research, and to cater for inservice training and career development needs.

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1. For a fuller statement on these provisions, see "Educational Research and Development in Nepal" by Mohammad Mohsin in *Educational Research and Development in Asia*. Peport of a regional meeting. Bangkok/Tokyo. 1973, p.150-55.
2. Readers who wish to assemble bibliographic references to the large volume of articles and reports published from research projects in Nepal should consult:
   (a) The *Bulletin* of the Unesco Regional Office for Education in Asia and Oceania which was published twice annually from 1966 to 1972 and annually since 1973. Each bulletin is devoted to a special topic and normally includes a bibliographic supplement of relevant research studies from each country.
   (b) *Education in Asia*. Reviews, Reports and Notes, Unesco Regional Office for Education in Asia, Bangkok. Each issue includes notes on Asian documents.

It organizes seminars and discussions on subjects like population and development, research methodology, financial management, etc.

3) **Research Centre for Nepal and Asian Studies**

This centre is primarily concerned with promoting socially-relevant research and making this available to the society at large through publications. It also encourages interdisciplinary cooperation both in research, in seminars and workshops.

4) **Research Centre for Educational Innovation and Development**

This centre is established to conduct research and evaluative studies in the field of education, and to develop and try out innovative projects and actionresearch for educational development in the country. To be more specific the objectives of the Centre for Educational Innovation and Development are:

(a) To conduct high-level research and innovative projects in education at the school and higher education levels, in the context of Nepal;
(b) To make evaluative studies of the effectiveness of various educational programmes in operation;
(c) To carry out interdisciplinary research and action research in education;
(d) To develop viable educational programmes and techniques for launching mass education and non-formal rural development schemes; and
(e) To disseminate new ideas and information for educational improvement by organizing seminars, bringing out publications and using other means of promoting a flow of information.

This Centre has stimulated much research activity in implementing these objectives. Some of its most notable investigations are:

(1) Assessment of UNICEF Support to Education in Nepal (1980);
(2) Effectiveness of Primary Education: An Evaluation Study (1981);
(3) Equal Access of Women to Education Programmes in Nepal: An Evaluative Study (1978);
(4) Functional Adult Education Programmes: An Evaluative Study (1980);
(5) Development of Low-Cost/Simple Educational Materials. (Continuing Developmental Research).

5) **University Curriculum and Research Activities**

With a view to promoting research, the University has made research compulsory in the final year of post-graduate studies in all faculties, including education. This is, in fact, a part of the university's curriculum. Submission of a thesis in a related problem area is a prerequisite for completion of post-graduate degrees in all disciplines.

6) **University Institutes and Research Activities**

All institutes at Tribhuvan University have a planning and research cell, and invite their teachers to submit project proposals. These proposals are studied carefully and if the topic is of priority importance, the institute

provides the financial assistance and expertise needed to undertake the research suggested.

2. Research Activities in the Ministry of Education

As already indicated, the programming, planning and evaluation divisions within the Ministry of Education also undertake evaluations of on-going programmes and make suggestions to policy-makers for new plans or the re-direction of effort. Similarly, the Curriculum Development Centre within the Technical Division of the Ministry has a primary responsibility to develop and improve upon prescribed educational curriculum. It conducts seminars and workshops for teachers, it takes responsibility for the preparation of textbooks and it produces the teaching materials used in schools.

Training of Researchers in Nepal

The background already provided may suffice to emphasize that educational research is an emerging area of professional concern in the development of education in Nepal. There is in fact a great demand for well-qualified researchers and it is at least 10 years since the inadequacies of the facilities to train personnel for educational research and development was regarded as "the weakest link in the entire chain of educational activities in the country".[3]

To meet these needs the research centres often conduct training programmes for their own staff under the direction of their senior personnel. On occasions foreign experts are invited to help with such training programmes. The Research Centre for Educational Innovation and Development, for example, has set up a training course of this type on 'methodology and techniques in educational research and planning' in the mode of a workshop-cum-seminar. The technical services from Nottingham University in England were made available for this workshop by the British Council in Nepal.

Another method adopted by the centres is to train their research assistants through the discussion of research proposals. In such disscussions, problems pertaining to methodology, research tools and methods of analysis are high-lighted. Again, similar discussions follow when draft reports are prepared which add to the insight into the problems of research, achieved by young researchers. Young researchers also serve as assistants to senior research staff which also provides an apprenticeship to their job.

3. See Mohammad Mohsin of *cit*. p. 152.

Problems and Suggestions

1. Problems

But one of the main problems the research centres are now encountering is how to attract talented researchers. Most of their younger researchers are now university graduates with a limited basic knowledge of research traditions and methods. Only those who have received post-graduate degrees have acquired an elementary knowledge of research through the theses they have worked on.

In these circumstances, the research centres have tried to develop their own training programmes. These programmes differ in content however and no core curriculum or prescribed guidelines have been formulated. A researcher who has received a large part of his training in a centre may not therefore have had sufficiently comprehensive training to enable him to undertake high quality or creative research. If, in addition, these researchers are unable to maintain contact with research centres outside of Nepal their knowledge and expertise is unlikely to grow and they will not be in a position to provide the leadership that is needed.

2. Suggestions

In the light of the needs of Nepal, the following suggestions are offered for consideration in the training of young educational researchers.

(1) That a separate institution for research training should be established to cater for the needs of researchers belonging to different research centres.

(2) That a core (or basic) curriculum should be formulated for training educational researchers.

(3) That foreign assistance, both in funding and expertise, should be made available for conducting training programmes.

(4) That training programmes in different fields of research, at national and international levels, should be organized, in addition to general training programmes. Researchers working in specialized fields should be invited to such programmes or workshops. Thus, there may be separate training programmes for researchers in the teaching of mathematics, or science teaching and so on. If such programmes become feasible it would be possible for researchers in particular areas to obtain a much more precise and relevant training for the problems they will have to face.

Section Three

ACHIEVING A COORDINATION OF EFFORT

PROMOTING EDUCATIONAL RESEARCH IN CHINA
—A Personal Viewpoint—

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Learning through Practice in Different Ways

Since we have had relatively little experience in China in the training of young educational researchers, I am not in a position to speak knowledgeably about this topic. Hence this paper provides only some brief, introductory account of recent developments which foreshadow a strengthening of research activities in my country, and expression of our hopes for continued collaboration with other Asian nations.

Current Status of Educational Research in China

Education has been a very old social undertaking in China. As early as 2500 years ago it was a prominent preoccupation of the great and prestigious educationalist Confucius (BC551 to BC479) who founded an Academy, an oldstyle, private school, selected students for it from various parts of the country, and offered them instruction in the 'Six Arts'. Confucius was said to have 3000 students, a comparatively large enrolment for the times. For more than 2000 years since that period, education in China has developed in many ways.

However, as a scientific enquiry, educational research is a new field. In the 1920s, Zhongshan University in Canton established an institute of educational science which may be regarded as the pioneering institution for educational research in China. But it lasted only briefly due to the unfavourable social and educational conditions of those years.

In 1949, the foundation of the People's Republic of China created much more favourable conditions for the development of education for the people generally, as were for the undertaking of educational research. After ten years of exprience in running a socialist education system and active preparation on the part of educational researchers, the Central Institute of Educational Research (CIER) was established in 1960. However, it was illegitimately disbanded during the 'ten years of turmoil' of the so-called 'cultural revolution'. It was not until 1978 that the Institute was re-established with the approval of the State Council.

There are now nine research sections within the Central Institute of

Educational Research in Beijing. These provide for research into educational theory, instructional methodology, educational psychology, history of education, educational systems, school administration, modern educational technology, early childhood education and comparative education. Each of these research sections has been strengthened by appointment of research staff who had many years of experience in the practice of education, and who have different kinds of professional skills. A number of young educational researchers have also been added to the Institute. In order to promote educational research, the Institute now publishes two journals, a monthly, *Educational Research* and a bimonthly, *Foreign Education*.

The objective and main functions of the Institute may be identified as:

(1) To undertake research enquiries centering upon the theory, history and current issues of education in China, in the light of the guidance offered by Marxism-Leninism and Mao Tsetung's thought, thereby contributing toward the development of the socialist cause;

(2) To interpret the historical heritage critically and draw upon useful experience from other countries;

(3) To adhere to the policy of proceeding from actual conditions and combining theory with practice; and

(4) To promote international academic exchanges and to participate in international conferences and other activities in a planned way.

Apart from the Central Institute of Educatinal Research other institutions for educational research have been established in many provinces, municipalities or autonomous regions and some universities. These include specialized research institutes of higher education, two research institutes of foreign education, institutes of modern educatinal technology and so on. Such institutes have their own research tasks, topics, programmes and priority areas.[1] In the light of the long-term national objectives for educational science worked out in 1979 at the National Congress of Educational Sciences, these institutes make their own plans and develop research in areas in which they have distinctive contributions to make . Some of these institutes have a cooperative relationships with the Central Institute of Educational Research, others maintain business contacts with it, and some are entrusted with responsibility for certain mandatory research programmes.

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1 . **Editor's Note**: Examples of such institutes are Institutes of Foreign Languages, in Beijin and Shanghai, the Central Music Conservatory, the Central Institute of Nationalities, the Central Audio-Visual Institute, and the Normal University, all in Beijing, and the East China Teachers' University in Shanghai. Additional information in English may be obtained from Thomas Fingar's *Higher Education and Research in the People's Republic of China*, Institutional Profiles, Washington DC, 1981, 277p.

Emerging Priorities

In the past 3 or 4 years educational research in China has achieved some positive results. These have taken into account in promoting the development of education in China and have also helped in the further unfolding of the potential of educational research. Viewed from a nationwide perspective, educational research deals with a great variety of topics but could be said to be focussed primarily upon the following questions:

(1) The study of the development of education and its experience during the 32 years since the foundation of the People's Republic of China;
(2) The study of the relationship between education and the economy;
(3) The study of the structure of secondary education; and
(4) The study of the universalization of primary education.

Ways of Training of Young Educational Researchers

As previously mentioned, we have had little experience in China in the training of a new generation of educational researchers and so I limit myself here to some of my own views.

Unifying Research and Practice

First, with regard to the relationship between educational research and educational practice. As we know the spirit of educational enquiry and research has long been embodied in the process of developing human civilization and the practice of education, in which people make constant enquiries, has accumulated much experience and acquired much knowledge about the 'laws' of education. In ancient China, many of the statements of Confucius about education represented an empirical summing up of his practices in education, which up to this day continue to be beneficial to our education and instruction. Through the thousands of years since Confucius's time many educationalists in China have advanced many other valuable ideas which have also developed out of their successful practices. But this kind of research can undertake only spontaneous exploration of practice and thereby achieve only limited results.

Modern educational research was developed on the theoretical basis of experimental psychology which has a history of scarcely more than 100 years. It is only in very recent times that educational research has been developed by the State in a purposeful and organized way, that a contingent of professional educational researchers has been formed, and that its procedures have been sufficiently improved to enable enquiries to probe more deeply and on a larger scale. This kind of educational research, on the other hand, runs the risk of being divorced from educational practice. It is my view that modern research must also proceed from

practice, define its scope, determine its research priority areas, and from that base set up its investigations and experiments. It is only in this way that we could, after scientific enquiries under different conditions and in differet modes, gradually come to understand the objective laws of education, and put these laws to the test in a broader context. The results of this kind of educational research would therefore be the outcome of educational practice as well as a theoretical guide to the further practice of education.

Let me take as an example, the work of Tao Xingzhi (1891-1946), the famous people's educator in the history of modern China. In his early years, Mr Tao studied at American universities and became a graduate student under John Dewey (1859-1952). After his return to China, he took an active part in the reform of the education system of China. From the 1920s on he advanced and advocated the idea that 'Society is school' and 'Life is education'; he founded the famous Xiaozhuang Normal School in Nanjing, the Shanghai Work-Study Society in Shanghai, the Yucai School in Chonguing and the Community University. These were examples of practice in implementing his 'life-education' theory, and in turn his 'life-education' theory was further developed through these educational practices. This example may suffice to emphasize how Tao Xingzhi, under the conditions of his day, combined both theory and practice.

The present-day conditions for educational research in China are incomparably superior to those of Tao Xingzhi's time .We have the guidance today of Marxism-Leninism and Mao Tzetung's thought and much more experience about the combination of theory and practice in advancing educational objectives. We should therefore be better placed both to combine educational research with educational practice, as well as to integrate educational researchers with the broad masses of educational practitioners at school.[2]

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2. **Editor's Note**: These objectives have also been advanced in recent years by the establishment of the National Association of Educathon and under it many learned societies of Pedagogy, of the History of Education, of Marxist Educational Thought, of Comparative Education, of Early Childhood Education, of Chinese Language Teaching in Schools, and of Foreign Language Teaching. These associations and professional societies have been set up in the municipal, provincial, and autonomous regions to promote a massive effort in educational research. In addition, several educational journals and books have been published in implementing the policy of letting a hundred flowers blossom and a hundred schools of thought contend. In February 1982, the Ministry of Education also resumed publication of Higher Education Front *(Gaojiao Zhanxian)*, its official journal. This journal is for workers in higher and secondary technical education and features discussions between teachers, students and staff members, reviews of books, journals and so on.

Interesting observations on the growing impact of educational exchanges with Western countries through, for example, treaties for cultural and educational exchange with the French and German governments, research institutes and universities, and the publication of books in China on education in other countries are presented in an article by Ruth Hayhoe, Fudan University, Shanghai, ' Chinese

Stimulating an Interactionist Viewpoint

My second personal viewpoint as directed is concerned with the interactions of educational process or of the educational system. According to my understanding education must be regarded not only as a science but also as a technology. From this viewpoint I deduce that there are three interactions to be noted in an educational system or in the educational process.

First, for personalities and personal development the interaction is between the sense organs (visual, auditory, sensory···) and the brain. This is the basic interaction in all education. It has both psychological and biological attributes or characteristics.

Secondly, for the relationships of persons, the interactions are between one individual and another, between individuals and groups, or between groups and groups. Among these, the principal interaction in education is between students and teachers. It is essentially a sociological interaction.

The third interaction is between persons and materials, which focusses on how men or women or students use the physical environment (including classroom, libraries, laboratories, sportsgrounds, museums) inside and outside the school, or the teaching aids (including textbooks, experimental equipment, audio-visual media ···) and how these various material conditions influence personal responses or learning. This set of interactions are basically physical in character.

However, since the functioning of the visual or auditory senses depends upon light or sound this may also be regarded as a physical phenomena. The relationship between these interactions are also extremely complex. From a technological point of view then the function of educational research is to study these interactions in educational settings in order to discover the objective 'laws' about them. To cope with such enquiries, educational researchers have to approach their task through a multi-disciplinary grounding so that they may gradually handle the essential knowledge and skills required for engaging in educational research of this type. Hence, the young educational researchers must be asked to learn not only pedagogy, psychology or instructional methodology but also mathematics, physics, biology, sociology and so on.

Educational research thus covers a wide and complex panorama of human knowledge and demands the common endeavours of many professionals with differring academic background including linguistics, mathematics, the social science, the natural science, pedagogy and psychology, as well as several years at least of teaching practice. At present a large proportion of Chinese educational reseachers, especially the young, fall short in one way or another of these expectations for qualified researchers. Some coming from education and the social

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Universities and the West: Issues and Debates' in *Education*, Vol. II, No. 1, June 1982. Information on such matters is also available, in English from the Chinese Education Association for International Exchange, Beijing.

science, lack a knowledge of mathematics and the natural sciences; others coming from the natural sciences or mathematics lack knowledge of pedagogy, psychology and sociology. For those just coming from a university, everyone lacks experience with school practice. And with regard to competence in foreign languages, which is essential for much creative educational research, many of our young researchers are simply not skilled or confident in using a foreign language.

Conditions for Improving Training

In accordance with the above conditions, young educational researchers need to be provided with training opportunities, relevant to their respective needs, which enable them to learn through practice in different ways in response to those needs, and which at the same time fosters their ability to undertake scientific research. The patterns of training provided may, of course, vary according to the conditions of the institutions to which they belong. Beyond basic training, there are four ways of also providing for the inservice development of young research workers which seem worth special attention. These are:

(1) The promotion of self-study and self-reliance in research work. It should not be overlooked that young researchers may best learn what they need to know immediately from a close association with experienced and highly-qualified professionals in their places of employment who are thoroughly familiar with the technical requirements of particular projects.

(2) Through opportunities to learn from elderly or older specialists and professors inside or outside their institute in setting up research contracts which are relevant to the advance of theory or practice.

(3) By enabling young researchers to participate in relevant workshops or courses sponsored by other institutions. It should be necessary to emphasize that providing opportunities to participate in seminars or lectures encourages learning and self-reflection.

(4) By identifying the training opportunities created by various educational experiments or surveys, it is often possible for institute directors to provide young research workers with opportunities for systematic and purposeful study as a special part of a wider educational experiment.

It goes without saying, I assume, that whenever appropriate opportunities occur, young educational researchers and post-graduate students will be sent abroad for short-term or long-term study and visits.

The enrolling and training of post-graduate students in institutions of higher education or research institutions is of course a more fundamental way of providing such training from a long-term point of view.[3] Hence, the improvement of the curriculum for undergraduate and post-graduate students in colleges of education and graduate schools is of even greater importance. It is a task which I hope will be greatly facilitated by the outcomes of this seminar. The long-term, over-all programme for developing educational science and research in China formulated in

1979 is being implemented with vigour, a network of research institutions has been created, and the numbers of post-graduate students in departments of teacher education or other institutes of higher learning who are preparing for careers in research has expanded considerably. Within the profession of teaching and education in China there is indeed, now much enthusiasm for educational research.

3. **Editor's Note**: All told in 1980 1,144,000 students were enrolled in 676 institutions of higher learning in China. Only about 2 percent of these students were graduate students, but the numbers are increasing rapidly. Six out of ten of the institutions of higher learning (411) are under jurisdiction of the governing authorities of provinces, municipalities or autonomous regions, another 226 are under the jurisdiction of various ministries or commissions of industry, agriculture, forestry, public health, etc., and only 39 are under the jurisdiction of the Ministry of Education.

THE TRAINING OF RESEARCHERS IN THE BEHAVIOURAL SCIENCES—The Example of KIRBS—

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Introduction

One and a half decades have now passed since the Korean Institute for Research in the Behavioral Sciences (KIRBS) was established as an independent, non-profit research organization with the declared aim of applying behavioural sciences to the solution of human and social problems. From its inception it has also been an 'educational' institute in that it aimed to train prospective researchers in behavioural sciences. An introductory outline of the activities of KIRBS may therefore serve as background to observations to follow.

When Korea was beginning to take a giant step forward toward economic development, few would listen to what then seemed a strange term, 'behavioural sciences', much less become enthusiastic about establishing an institute. But the man by the name of *Chung, Bom Mo*, the founder of the Institute, looked into the future of the country and recognized, before everybody else, that it was upon human behaviour and resources that the country's future would depend.

Now, 15 years later, the Institute has grown into a well-established research centre with 50 people on its staff who not only carry out basic and applied research, but also conduct seminars and training, publication and consulting services. The Institute has cooperative research relations with various domestic and foreign organizations and exchanges professional personnel with several of the foreign research centres.

By the end of 1980, KIRBS had completed a total of 171 major research projects, published some 250 research articles through its monograph series *Behavioural Sciences*, or its working paper series, *Research Notes*. It has also developed 52 educational and training programmes. In addition, a total of 141 researchers have worked at KIRBS, of which 31 have received PhD degrees in foreign countries, 56 occupy central posts at major colleges and universities in the country, 14 are leading members of other similar research centres, and another 14 work in industrial firms. At the present time, there are as many as 30 currently

working toward their advanced degree in the countries all over the world.

The major activities of the Institute may be summarized into six areas:

(1) Research;
(2) Seminars and Workshops;
(3) Consultative Services and Counselling;
(4) Publications;
(5) Training; and
(6) International Cooperation.

A brief description of these activities will be presented in the following chapter.

Major Activities of KIRBS

Research

KIRBS is primarily a research organization. Most of its research projects, both of basic and applied nature, are planned and carried out by the research staff of the Institute. Their fields of research cover psychological test and development, organizational and industrial research, research on social issues, family planning research, child development research, and learning and instruction. The Institute also conducts research in cooperation with other organizations such as industrial organizations, schools, and governmental agencies, whenever such cooperative efforts are deemed profitable for the advancement of behavioural sciences, and make profitable contributions for the development of the client organization and for the society as a whole.

Seminars and Workshops

The need for behavioural science research in human and social affairs is increasing in almost all social organizations including schools and industries. In order to meet these demands, the Institute plans and conducts seminars and workshops aimed at equipping new recruits with a background and with field experiences, in behavioural sciences. In responding to requests from outside, KIRBS also carries out on the job training and workshops for the requesting institutions. As the need arises, the Institute also disseminates knowledge from the behavioural sciences for the benefit of the individuals and social organizations through seminars and lectures with the professionals in particular fields. These seminars, workshops and symposia associated with training and diffusion of research products, include (1) a lecture series for the general public or for selected participants in specific audiences, (2) seminars and symposia for selected participants on specific topics, and (3) international seminars.

Consultative Services

In addition KIRBS offers consultative services to social organizations where behavioural science knowledge promises to be helpful and can be profitably used. Such consultative services include: (1) expert advice on the profitable use of psychological tests in selection, classification, and placement of personnel in industrial and school settings; (2) consultations for industry on effective management and public relations; (3) counselling services to the parents for more effective family education on children's adjustment problems; and (4) consultation on resesearch methods, upon request, from outside organizations.

Publications

In order to facilitate communication among professionals in the field of behavioural sciences and to ensure a practical and profitable utilization of the behavioural sciences knowledge, the Institute has adopted the policy of publishing all research findings produced at the Institute. Six different kinds of publications are currently produced.

International Cooperation

In the interest of promoting the growth and development of behavioural sciences, KIRBS places special emphasis on cooperative research endeavours with other countries. The mechanisms used to achieve this goal are: (1) an exchange of professional personnel for further training, which is often carried out in connection with cooperative research projects; (2) the planning and administration of international symposia in behavioural sciences; (3) research collaboration in cross-cultural studies with overseas social scientists; and (4) the establishment and administration of an international committee for support and coordination of cross-cultural research.

Training

The Institute consists of professional staff and administrative support personnel and graduate students in the internship training programme. Though primarily a research institute, KIRBS does not leave the training of its research personnel solely to the universities; rather, it strives to train its own researchers on the job at the Institute. This has prompted the Institute to stress staff-training components of various kinds. Staff researchers are required for instance, to keep up with the recent literature in the behavioural science with the emphasis on psychology, sociology, educational technology, philosophy of science, statistics, and research methodology. They are at the same time urged to participate in the regularly scheduled institute seminars where scholars outside the Institute are invited to give lectures. Each research division also holds their own divisional seminars in which various issues and problems relevant to the division are raised

and discussed.

Educational Research Projects

A. Research Projects Completed in the Last Four Years

Pre-Primary Education Projects (1978-1981)

a. First year - 1978: Basic research, development of preliminary forms of educational materials, training of personnel.
b. Second year - 1979: Small scale feasibility field trials, data analysis, and revision of materials.
c. Third year - 1980: Continuous small scale study and pilot dissemination stage.
d. Fourth year - 1981: Comprehensive evaluation of programmes and preparation of recommendations pertaining to widespread diffusion.

Identification and Education of Gifted Students (1979-1980)

a. Development of screening devices.
b. Screening and placement of students.
c. Experimental operation of the special class.

National Assessment of Educational Progress (Elementary School)

a. First in 1973, Second in 1980.
b. Four subject-matter areas including National Language, Sciences, Social Studies, and Maths.

Attitudes Towards Science and Modern Technology (1979-1980)

a. Survey study aimed at identifying general attitudes of Koreans towards science and modern technological practices such as medicine, electricity, telecommunication, etc.
b. Contrasting these with age-old practices among traditional Koreans.
c. Supernatural beliefs of Korean adults.

Longitudinal Study of Korean Children

a. Study of 100 children, twice (March and September) every year, from March 1975 till 1995 (for 20 years).
b. Physical, intellectual, emotional, social development of children.
c. Parent attitudes towards children.
d. Family environment, both status and process.

B. Research Projects Being Planned

Integrated Approach for Early Childhood Development: An Action Programme

a. Nutritional status, health status of children plus educational baseline.
b. Environmental factors including sanitation, parents attitudes, etc.
c. Evaluation of effects of these inputs on learning abilities.

Study for Science Education: The Concrete-Inquiry Instruction Model

a. Testing science knowledge levels of teachers at elementary, middle, and high schools.
b. Development of concrete-inquiry (highly specified and structured) instructional strategies.
c. Development of teachers' guide and experimental programmes.
d. Evaluation of outcomes, comparing the experimental and control classes.

Science Education Programme for the Gifted Students at the High School

Development of Low-Cost Educational Technologies for Education

Qualitative Evaluation of the Pre-Primary Education Project.

Career Development Project for Different Age Cohort

Training Components

As mentioned earlier, though not legally an educational institute, KIRBS has 'unwritten' objectives for training prospective researchers in the behavioural sciences. Underlying this basic intention there are again unwritten directions which may be expressed as follows. First, *research personnel shall be assigned by project basis rather than by individual's specialization*. This direction has been strictly observed, particularly with research interns (see below), because it was our conviction that the researchers, particularly young people, with potential for further growth, must not be subject to premature limitation or closure of their development, or restrictions which might narrow down his or her potential for growth. They ought to learn, we believe, as much and as widely as possible, while still young.

Secondly, *emphasis shall be placed on research methodology rather than on the content of research*. This is the question of *what* and *how*. If you want to make a pottery, but do not know how to make it, you will not succeed. If you want to do

a research, but do not know how to do research, you will not succeed. Sharpen your sword and you will be able to cut anything.

Thirdly, *research shall be carried out by ad hoc task forces rather than by a divisional team with permanent staff*. This is somewhat related to the first point, mentioned above, but it is applied to all the research staff. This approach created some concern initially since it implies a frequent dismantling of the coherence of an originating team. However, it was soon found that under this flexible pattern, work was done faster, the spirit was higher, manpower was saved more, and above all, the staff learned more by being exposed to a variety of research activities.

These are some of our principles, so as to speak, of staff training. In addition, we adopted the following policies:

(1) Whenever we find ourselves short of knowledge or skills, particularly in regard to specific content areas, we have frequently utilized partime consultants, who usually come from major universities in the country.

(2) We recruit graduate students annually, in various fields of behavioural sciences, as *research interns* and assign them to research projects regardless of their university specialization. Upon their recruitment, they are given a series of orientation sessions and a set of required reading materials, mostly on methodology. These interns are of course permitted to continue attending their graduate classes.

(3) Our assistant or associate researchers are generally holders of an MA or PhD degrees. They are required to publish a certain number of scholarly articles in either the publications of KIRBS or other scholarly journals and every possible assistance is given to them in writing articles.

(4) Research associates are usually holders of a PhD degree and they are responsible for project development, planning, and report writing. They are the senior staff at KIRBS, and they also participate in KIRBS general planning.

(5) All the research staff, including interns, must participate in planning research projects. The planning meeting is of the kind where any 'crazy' idea is respected and listened to uncritically.

(6) All the research staff are required to participate in the *Weekly Seminar* (usually on Saturday), where senior staff or other guest scholars give lectures.

(7) At KIRBS we also convene an annual staff seminar where 'ideation' (or brain-storming) for research projects in the next year takes place.

We should not like to leave the impression however, that the KIRBS training programme is without its problems. First of all, many of the research interns, and even assistant researchers lack research experience, and are thus unable to carry out research projects independently. The training given at the colleges, both at the undergraduate and graduate levels, does not seem sufficient to equip the students with adequate capabilities. They need on-the-job training for at least one or more years. Secondly, incentive systems are not competitive. The expansion of higher

education institutes in the country has called for many teaching staff and the incentive systems for college teaching are much more attractive than at the research institute. Thirdly, the Korean society, as a whole is not particularly keen about the 'soft' sciences like behavioural sciences. In the past, development has meant 'economic' growth and so the human sciences have received considerably less attention than they deserve. The situation is improving slowly but is still needs a major and fundamental change in national policy toward support for social sciences.

Recommendations

Several recommendations could be made at this point on the basis of the experience gained from development of this single institution.

1) Universitty education, both at the undergraduate and graduate levels, seems to fall short of the ideal for training competent educational researchers for obvious reasons. Hence programmes for training future educational researchers should be supplemented after the BA degree by practicums at research institutions.
2) Training programmes should benefit young researchers:
   —by helping them avoid premature specialization in one area of subject matter;
   —by encouraging a staff toward wide reading and expansive writing, with proper supervision, if necessary; and
   —by emphasizing the methodologies in educational research rather than specific areas of subject matter.
3) On-the-job training seems to be a useful approach in enhancing competence in educational research. A system should be developed in such a way that staff are encouraged to actually get involved in a research project from the very beginning of project planning. In brief, staff should obtain actual experiences in the entire process of research activities, including test administration, field work, computation of simple statistics and so on. It is often helpful that the research staff are permitted to 'mess about' with research data, fiddle with the data gathered, fumble with computer programmes, and make lost of errors, without penalty.
4) The 'brain drain' frequently interferes with staff on a development programme, as well as with the rhythm of ongoing research projects. In fact, rapid staff turn-over can sometimes be extremely costly. Therefore, institutions must create a suitable environment for the research staff. Policies and financial support must provide opportunities for progress which would attract and retain quality people. Competitive salaries, opportunities for advancement and personal growth, and favourable working conditions are all important factors.

5) Research staff will also profit from a period in the field of educational practices (schools, government offices, etc.). This will have significant implications for the individuals, research institutes, and research project development. Research staff should have opportunities for direct contact with the educational problem in the field, thus help to come up with new types of researchable problems. A gradual and well-planned evaluation of such a system could also produce a much-desired link with educational practices in action.

6) Moreover a research director himself or herself ought to be the one who is equipped with knowledge, skills, and experiences in planning, conducting, and evaluating research programmes.

IDENTIFYING A NATIONAL INFRASTRUCTURE
—An Example from Korea—

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Educational research has advanced dramatically in Korea in the past 20 years and the country now has a strong infrastructure for promoting educational research as well as a large establishment of trained personnel. To supplement the comprehensive account of the training potential and atmosphere that has developed in the private research institute led by Dr. Sung Jin Lee, this essay attempts to provide a brief outline, first, of the other types of educational research organizations that exist in the Republic of Korea, and secondly, an introduction to the typical forms of academic courses that are available for training educational researchers at the graduate and undergraduate levels in education.

Types of Research Organizations

Four types of research organizations may by identified according to their distinctive structural characteristics.

—First, there are central research organizations which are a governmental or semi-governmental nature;
—The second type is the provincial and municipal research organizations strictly controlled by the government;
—The third is the educational research organizations or centres attached to universities and colleges; and
—the fourth is private research organizations under independent management.

1. Central Organizations

In Korea at present there are two principal organizations of the first type. One, the Korean Educational Research and Development Institute is well known by its short title, KEDI. It has a staff of more than 450 academic, technical and administrative personnel and has developed rapidly within the last ten years as a leading and large institution.

At present it consists of four divisions, a Division of Curriculum Research and Development, a Division of Education Foundations and Policy, a Division of TV

and Radio Production, and a Division of Administration and Library Services. Within both the Division of Curriculum Research and Development, and the Division of Educational Foundations and Policy, the research programmes are broad. Research on curriculums for instance, ranges over both elementary and technical education. It includes investigations on textbook development and surveys of scholastic achievement. Similarly, within the Division of Educational Foundations the research ranges from Korean language development, studies of gifted children as well as of those with disabilities, height and growth studies as well as studies of resources management. The same diversity also occurs in other divisions and it might be noted that KEDI also takes a leading role in promoting international collaboration on research undertakings.

The other central organization is the Central Inservice Training Centre for Educational Personnel and Educational Research, now known as the National Institute of Education. As the name indicates, it has three main functions: first, inservice teacher training involving nearly 7,000 teachers, in 1980; secondly, the management of the National College Entrance Examination and its related researches; and thirdly, it is responsible for producing and utilizing educational materials, publications and the distribution of educational aids. As a result of an agreement with UNICEF in 1978, it has created a network of distribution centres for educational aids throughout the country. One of the major problems of this institution, as shown by its more long-term name, is the imbalance and the lack of coordination in its two functions. It tends to over-emphasize one function or the other, depending upon who is the senior administrator in charge of current policies. But its prime task is to coordinate the research activities carried out throughout the country by city and provincial boards of education.

2. Provincial and Metropolitan Centres

The second group of research institutions are the 11 provincial or municipal institutes for educational research. These centres have been established in nine provinces and in two major metropolitan areas, Seoul and Pusan, and they are directly under the control of the Ministry of Education which supports them. Therefore all of their staff are government officials, regardless of their responsibilities. One of the major problems faced by these centres is the lack of creativity in their research and the limitations of their research personnel due mainly to a low level of salaries. Their primary tasks are to provide inservice training for about 50,000 teachers each year, to develop and produce audio-visual materials, handle publication and information services, and finally to disseminate teaching manuals and evaluation devices. They are thus very directly involved in up-grading the quality of teachers.

3. University Research Institutes

The third type of research organization are the educational research institutes

or centres located in universities or colleges. Most teacher's colleges, for instance, whether private or public, have an educational research centre attached to them. There are 30 such institutes at the present time. The Educational Research Centres attached to Korea University and to Yonsei University are typical examples of active centres of this type. The Educational Research Institute attached to the College of Education at Seoul National University, where I am partially involved as a senior researcher, was established three years ago. Before that time we had an Educational Psychology Research Laboratory informally established around 1955 by the enthusiasm of Professor B. M. Chung. The Seoul National University Educational Research Institute is now one of the Associated Centres of the APEID Network.

It is a small organization with no full-time academic staff. We have five senior researchers, but we are all full-time faculty members of the college of education and therefore only partially involved in the work of the research institute. We have 5 to 7 research assistants, depending upon the number of projects being carried on. All of them are graduate students working for MA degrees. One of the major problems of the research institutes attached to colleges of education is the lack of cooperation and communication between them. They also attract adverse comment from teachers because their research is often not regarded as practical.

4. Private Research Institutes

The fourth type of research organization is the private institute, managed independently. Currently, the only organization of this kind in our country is the Korean Institute for Research in Behavioural Sciences (KIRBS) which was established in 1968. Its work is described separately in this book by its director, Dr Sung Jin Lee.

Typical Training Provisions

With this background it is now possible to outline the types of academic courses for training in educational research that are offered by colleges in Korea. Within the Department of Education at Seoul University, to provide an example, five courses are offered at the undergraduate level; elementary statistics for educational research, which is a required course for sophomores, and four selective courses, including educational measurement, and theories of educational evaluation.

At the Graduate Level four courses are offered; research methods in education, and statistical methods in education, both first year courses for MA, and contemporary studies in education, and the language and logic of education, both first year courses for PhD.

At the Graduate Level in the Department of Education there are five major fields of study:

(1) History and Philosophy of Education;
(2) Curriculum and Instruction;
(3) Educational Psychology;
(4) Sociology of Education; and
(5) Educational Administration.

The four courses listed above are common requirements for all five of these major fields. However, if educational psychology is taken as a Major there are additional courses in research covering education and psychological measurement, educational statistics and research design.

Generally speaking, some of the problems which arise in training educational researchers through the courses provided by the Department of Education may be identified as:

—No courses are yet offered in application of computer methods to educational research even though our university has a fine computer centre.

—Since most courses relating to educational research are offered as electives it is possible for students to avoid them and to graduate without any basic trainining in educational research.

—No formal opportunities exist for an apprenticeship, or a practicum in educational research, and the prospects for working as a research assistant or in helping a professor with this research project are informal and spasmodic. If we honestly believe that research training is best acquired by doing research in a research environment, we are obliged, I believe, to provide a variety of opportunities for prospective research workers to participate in guided research activities, whether it is of an informal or formal type.

Section Four

CHANGES IN ADMINISTRATIVE STYLE THROUGH RESEARCH TRAINING

EMERGING RESEARCH TRENDS IN MALAYSIA

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Educational Research in Malaysia: A Background

The role of educational research in the enhancement of the delivery systems of educational services has been well-recognized. In fact, educational research in Malaysia has been called upon to play an increasingly important role in creating an adequate basis of information and knowledge for the effective provision of educational services and for an efficient management system from the Ministry of Education. Thus far, its contribution towards the improvement of the approaches in the organization and management of the education system has clearly been shown to be far-reaching. In terms of educational research at the central level, the Educational Planning and Research Division (EPRD) is the principal agency that has been called upon to play this prominent role for the Ministry of Education. Its origins go back over 20 years but a stepped-up staff training programme, assisted financially in the past decade by the Ford Foundation, has strengthened its capability. The Division has also made use of foreign consultants on short-term appointments for some major projects.

In the context of its important role, the EPRD is charged with a responsibility for identifying researchable problems and issues, for making arrangements to study or analyze them empirically and systematically, and for tabling the research reports before relevant decision and policy makers. The findings and recommendations of these research reports are generally expected to form the basis for formulating policies and for arriving at broad policy decisions. Irrespective of the models, approaches, methodologies, techniques or research paradigms that the Division adopts, the kinds of research conducted almost invariably cut across a broad spectrum of areas or issues that fall within the purview of the education system. It might be noted that many of the research activities of the Division are, therefore, concerned with issues relating to the performance of the national education system, vis-a-vis the attainment of the stimulated objectives of the Malaysian educational policy, and the overall national

development goals.*

Thus against the background of this function the findings and recommendations of the research projects which the Division conducts generally form the basis for defining issues and decision-making by the highest policy-making body of decision-makers in the Education Ministry. Its contribution to successive national plans have in turn been guided by *Rukunegara*, or the national ideology of Malaysia.

Nature, Scope and Magnitude

The scope and magnitude of the educational research projects undertaken by the Division are thus basically dependent upon the nature of the problem areas identified. In addition they are also governed by the availability, source and amount of funding provided. Generally among the areas that the research activity covers are:

(1) variations and differences in the participation and performance rates and patterns of rural and urban schools;
(2) variations and differences in the participation and performance rates and patterns among tertiary institutions and colleges in the country;
(3) problems and issues with regard to shortfalls in enrolments at rural schools;
(4) problems and issues with regard to residential schools;
(5) financing systems and expenditure patterns of schools and tertiary institutions;
(6) sociological issues with regard to the dropout problems, discipline, streaming etc.;
(7) general management and administrative-related problems in schools;
(8) pre-school related research projects; and
(9) specific areas of concern as periodically determined and deemed necessary by policy-makers.

It is evident that the nature of the educational research activities conducted by the Division, as described above, is characteristically policy and problem-oriented as contrasted with the academic nature of other research, action-oriented as contrasted with purely theoretical research, and applied as contrasted with the basic or fundamental research. Essentially then, the nature and scope of the research projects and activities are designed to respond to the needs and requests of policy-makers who form the Educational Planning Committee, chaired by the Minister of Education, for which the Educational Planning and Research Division acts as the Secretariat.

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* For a brief account of EPRD's data-collecting responsibilities, see Haji Ahmad bin Haji Sabeh, "Malaysia" in *Information: An Essential Factor in Educational Planning and Policy* (edited by George Psacharopoulos), Unesco, Paris, 1980.

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Monitoring System : An Additional Function

In addition to the broad research programmes and activities as noted above, there is another equally important function that the Division is required to perform. This function is related to the task of evaluating and processing of research proposal on education submitted by individual researchers as well as agencies, especially when the subject and samples of the studies involve student and teacher populations, schools, teacher training institutions and education departments that are under the responsibility of the Ministry of Education. This is an important function of the Division, since it provides the Ministry with the necessary mechanism to monitor the kinds of research activities that are conducted by educational researchers in Malaysia. It also allows the Division to scrutinize research proposal of prospective researchers in the field of education. As it is a requirement for prospective educational researchers to submit a copy of their research reports, dissertations or theses, the Ministry is thus kept informed of the findings and could refer to them when the need arises. In effect, this is a facilitating function rather than an obstructing one as the Division is the responsible agency, on behalf of the Education Ministry, in arranging the permit of entry for educational researchers to carry out their research activities in schools and other places. This is indeed an important feature of a favourable climate for educational research in the country, and a means of evolving close collaborative relationships, in particular, with the Faculty of Education at the University of Malaysia.*

Broad Classifications of Educational Research in Malaysia

With this brief introduction to the nature and functions of the agency that is officially and centrally responsible for the conduct of educational research in Malaysia, it may be helpful to classify educational research activities, as perceived, into several broad groupings:

1) Firstly, there is the group of educational research projects and studies conducted by the agencies of the Ministry of Education, especially those whose preoccupation is directly related to their assigned research function, and whose research findings and recommendations are expected to form the basis for broad policy formulations and plans for action. Two examples of such agencies are the EPRD, as described earlier, in terms of general policy issues and research problems, and the Curriculum Development Centre (CDC)

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* For any interesting account of this collaboration, see Sim Wong Kooi "Educational Research and Development in Malaysia" in *Educational Research and Development in Asia, Report of a Regional Meeting of Experts*, Unesco Bangkok/NIER Tokyo 1973.

with respect to specific problem areas and issues in the domain of the national curriculum. For example, as a follow-up of the EPRD report of the Drop-Out Study (Murad Report, 1973) several bold measures, unprecedented in the history of Malaysian education, were undertaken by the Education Ministry to combat the problems of high dropout rates in the early 80's. Similarly, a national study by the CDC on the literacy and numeracy achievement levels of primary schools in Malaysia in 1977-1979 resulted in the reformulation of the primary school curriculum which emphasizes on the 3R's, as well as to areas of religious and moral education, artistic skills including music, art and handicraft and physical education.

2) Secondly, there is the group of educational research projects and studies performed by researchers from international agencies such as UNICEF, UNDP, UNESCO, INNOTECH, Van Leer Foundation, etc., working in collaboration with teams (or individuals) of locally recruited educational researchers with the blessing and concurrence of the Ministry of Education. Several studies could be cited as falling into this group, viz, Project DELSILIFE—Development of Coordinated Educational Intervention System for Improving the Quality of Life of the Rural Poor through Self-Reliance (1980), Project 'Continuing Lifelong Education for Teachers' (1982), Pre-School Research Project (1981), etc. References to these projects are often published in the Journal *Kementerian Pelajaran Malaysia* (or journal of the Ministry of Education, Malaysia) and *Nadi Pendidikan*, bulletin of the EPRD.

3) Thirdly, there is the group of educational research projects conducted by faculty members from the Malaysian Universities either in collaboration with research personnel from various other agencies of the Ministry, or in pursuance of their professional or academic interests.* Articles on this project often appear in the *Journal of Pendidikan* (the Journal of Educational Research) or the *Masalah Pendidikan* (Bulletin on Education Problems) both published by the University.

4) Lastly, there is the group of educational research and investigations conducted by private individuals, either foreigners or locals, and especially by graduate or undergraduate students, in pursuance of their respective degrees or diplomas in education.

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* **Note**: There is an assumption in some quarters that much of the initial academic training of Malaysian research scholars is provided outside Malaysia. It is interesting to note therefore, that of the 35 doctoral dissertations or masterate theses listed in a recent bibliography only 3 were presented overseas. See IDRC, *A Review of Teacher Effectiveness Research in Africa, India, Latin America, Middle East, Malaysia, Philippines and Thailand*, Ottawa, 1979.

Training of Educational Researchers

It might be noted that the formal training of educational researchers in Malaysia is generally limited to the training of teachers and scholars at the tertiary level institutions in the country. Basic as well as advanced courses in educational research are generally offered in the following Malaysian universities: the University of Malaya, Kuala Lumpur; the University of Science, Penang; the National University of Malaysia at Bangi; the University of Agriculture, Serdang and the University of Technology, Kuala Lumpur. These courses are considered as part and parcel of the overall training programme for the bachelors, masterate and doctoral degree students.

However, the degree of intensity, in terms of scope and depth in the related aspects of the field of educational research is dependent upon the nature of the programme offered by the students.

Educational research training for prospective educational researchers in Malaysia is also offered to those who pursue their advanced degrees in education in universities abroad, particularly in the USA, England and Australia. Beyond the university level, inservice courses are occasionally provided to the prospective educational researchers who are currently serving in the educational agencies of the Ministry, especially where educational research of some form is considered as a major activity of the agencies. The duration of these inservice courses however varies depending upon whether funds are available. Several EPRD and CDC officers attend weekend courses offered especially by the Faculty of Education, University of Malaya particularly in the area of educational research and evaluation. Teach-in sessions also conducted by senior research officers of such agencies particularly for those research assistants who are directly involved in conducting research and evaluation as their primary occupation.

Issues: Mode of Inquiry

When one examines the vast number of approaches and modes of inquiry employed by educational researchers in conducting their research activities, one is struck by the overwhelming use of quantitative survey research techniques tends to pervade through all stages in so many research activities. For example, even at the stage of sampling procedures, instrumentation, and questionnaire construction, there appears to be a strong tendency to emphasize the use of probability techniques and the statistical measures of test and re-test procedures as a means of achieving reliability in observations. When one examines further, at the level of analysis, one is again struck by the intensive usage of analytical techniques, from the simple descriptive statistics of frequency counts and distributions or percentiles and percentages, to the more sophisticated inferential techniques of analysis such

as the correlational techniques, the analysis of variance (ANOVA), analysis of covariance (ANACOVA) and factor analysis, to mention but a few. It is not uncommon to observe that many educational researchers go even further in applying more sophisticated techniques in their analysis such as the use of regression procedures, or discriminant analysis, and path analysis, in their attempt to separate and isolate the effects of one or several variables against other variables.* The application of the quantitative techniques then seems to have dominated much of the contemporary state of educational research in Malaysia today. As stated by the Board of Editors of the Journal of Educational Research, Faculty of Education, University of Malaya in their latest issue of the journal, "Our experience indicates that there tends to be dearth of indepth case studies as well as theoretical studies. The inclination of contributors is toward surveys and experimental studies. While empirical studies are undoubtedly important in a country where raw data in most fields in education are hard to come by, the Board feels that these should not preclude the value of other types of investigation". No doubt this has also been stimulated by the rapid development of computer facilities and the application and introduction of their various fast-batch systems and efficient programming packages.

While quantitative approaches have been popular among educational researchers, these methods have been criticized on many occasions. This criticism is generally founded on technical and on methodological grounds. First, it has often been said that researchers who are quantitatively inclined often isolate the number of factors within the educational scene. In addition they often exclude all those observations which are not easily quantifiable or which do not fit in their scheme of analysis. Somehow, in the interests of a certain conception of objectivity, the techniques used systematically create a distance, of a theoretical nature, between the researcher and the social actors.

The second criticism points to the fact that respondents in a study that is obstrusive in nature and to whom the questionnaires are administered, are sometimes reduced to being 'mere objects of study', from whom information is abstracted, patterns are deduced, inferences are made and generalizations arrived

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* See *Journal of Educational Research*, Faculty of Education, University of Malaya; VII, 1978/81. For further readings, see: Isahak Haron "Social Class and Educational Achievement in a Plural Society: Peninsular Malaysia", Chicago, University of Chicago, unpublished PhD dissertation (1977); Lian Tech Jin "Financing Higher Education: Education and Alternatives to Traditional Policy", Chicago, University of Chicago, unpublished PhD dissertation (1976); Hussein Hj. Ahmad "Achievement, Social Environment and Background Characteristics in Lower Secondary Schools: Peninsular Malaysia", California, Stanford University, unpublished PhD dissertation (1979); Yusoff Hanifah "Organizational Commitment: Teachers Attitudes in the Contexts of Peninsular Malaysia", California, Stanford University, unpublished PhD dissertation (1981).

at. Critics generally point out that the passive role a respondent plays during the administration of the questionnaire, or even during the structured interview, contradicts the implicit desire of the researcher that the same respondents should adopt the results and recommendations of the study.

The research projects conducted by EPRD, in particular however, and those of other agencies of the Malaysian Education Ministry, have tended to demonstrate a greater degree of variation in their choice of approaches, methodologies, techniques and also in their mode of research orientation. In several of recent research projects, the Educational Planning and Research Division has employed both the quantitative and qualitative paradigms as a point of departure in their mode of inquiry.

This trend contrasts with the approaches and methods adopted by the Division for studies in the early seventies. As an illustration, two particular research projects could be cited where the findings and recommendations have been used as a basis for consideration in the decision-making process. The first example is a research project relating to problems and issues of school administration in Malaysia, with a special focus on teachers' involvement in non-teaching duties. The research project carried out in 1978-1979 was designed to establish heuristically, the assumption that many teachers in the school system are unable to perform their teaching duties satisfactorily because of the commitment and involvement in attending to administrative duties not directly related to the teaching process in the classrooms. The data that were collected were obtained by using a pen-and-paper, survey-questionnaire technique supplemented by participant observation and in-depth interview techniques. A second example, worthy of note here has been a 'needs-assessment' research project focussing on the use of instructional technology by teachers in selected rural and semi-rural schools. Essentially, the research project was conducted in conjunction with a plan of the Malaysian Ministry of Education for establishing Educational Resource Centres in four selected states in the country. The methodology adopted in research project called for the application of four different but complementary techniques at the data collection stage. The first technique was an intensive participant-observation of teaching styles employed by the sampled teachers. This was based on an important assumption that teachers generally employ varied teaching styles in carrying out their tasks and that their styles of teaching exert varying emotional and intellectual influences on children. This was carried out by an intensive investigation of the teaching-learning process using a modified version of the 'Flander's Interaction Analysis Construct' (FIAC) as the major instrument in the *modus operandi*. The second aspect of the research methodology was an intensive interview with headmasters and teachers of the selected sample schools. These interviews, which were largely informal and unstructured, were intended to elicit information from educational practitioners, at the grass-root level, in order to draw upon their 'emic' perspectives (to use more precise ethnographic jargon) regarding their values, attitudes and

beliefs, with respect to their professional needs. The remaining two techniques were generally quantitative in nature whereby data in relation to the general existing physical conditions of the schools, classrooms, facilities and storage, were assembled. Data on the general sociological climate of the schools, and student achievement scores were obtained from a battery of tests.

It is apparent from this skimpy review of educational research in Malaysia that the use of qualitative methods has not been fully exploited but they have been applied on a limited scale. One important point needs emphasis here. Such methods are not new. But they have only a marginal role at the current stage of educational research in the country.

One important feature that characterizes qualitative methods and is often overlooked by educational researchers is that such methods attempt to create a closer contact between researcher and the informants under observation. Since social reality is an entity in motion, it needs to be understood from the inside and not solely from the outside. Thus qualitative techniques like the participative observation, or in-depth contextual and situational analysis or participant observation, require the researcher to participate actively in the social phenomena he wants to understand, while the relationship between the researcher and social actor does not fundamentally change.

Indeed, ethnographic research methods, if used with proper observation procedures when examining educational phenomena, are not as simple or as much fun as it is generally conceived. The need to 'eticize' and to 'emicize' (the ethnographic jargon for the 'inside' as against an 'outside' view) the social reality of the educational phenomenon can indeed be a challenging undertaking. Qualitative methods can be as demanding, and as rewarding as by any quantitative techniques. Furthermore, the social reality in the educational scene may be studied and analyzed not only from a technical level—field analysis of a particular disciplinary orientation, such as the survey or the experimental techniques, but also from the variable field analysis across disciplines. Participant observation, and other participative techniques, in-depth interviews and other qualitative techniques are some of the methodologies that educational researchers in Malaysia have yet to capitalize upon.

Implications for the Training of Young Educational Researchers

Several significant implications might be considered when designing the curriculum for the training of young educational researchers. First, the traditional and variable-type information accumulated through research projects, which are quantitative in nature and statistically descriptive in kind, have been shown to be inadequate in reflecting as closely as possible the reality of the educational phenomena. To reform the information-collecting system in order to make it more functional requires the complementary contribution of the qualitative research

methodology. Since greater demands have been made upon research to explain educational phenomena, the need to employ complementary approaches such as the ethnographic research paradigms, approaches, methods and techniques of observation, have become urgent.

The second implication is related to the fact that an educational researcher should always explore alternative methodologies and approaches when it comes to conducting educational research. To say that relevant social phenomenon can only be studied through the lenses of a single paradigm, without considering or employing and utilizing the other approaches, is to be guilty of what are characteristically termed ethnocentric, dogmatic and xenophobic attitudes. Indeed each research is unique. Each has its strengths and weaknesses. No single paradigm is perfect. Each has therefore to supplement the weaknesses of the other. Each approach has its mechanisms and procedures to check the reliability of the data and the validity of procedures adopted in order to fulfill scientific obligations. If the opportunity permits, both qualitative and quantitative paradigms should be used.

As a third implication, an educational researcher who has the expertise of both quantitative and qualitative approaches should not necessarily think that one approach is a substitute of the other when undertaking an educational research exercise. The reason is that qualitative methods are not and could not be substitutes of the quantitative kind and vice-versa. In fact, while both approaches would enable one to capture different yet complementary information, the nature of the research problem and issue under investigation should allow one to make a rational choice as to which methods or techniques which would be most suitable for the particular research project.

In the attempt to develop a training manual for the training of young educational researchers, it is important that the curriculum be designed in such a manner as to allow as much exposure as possible on the different approaches in educational research methodology. A veteran educational researcher once said (to me) that a strong foundation in the knowledge of both qualitative and quantitative approaches in research methodology and the ability to apply both approaches wisely and harmoniously, when studying a particular phenomenon in education, can generally lead one closer to the truth and reality of the situation.

THAILAND'S SCHOOL MAPPING PROJECT
—A Case-Study Emphasizing Inter-Relationships between Research and Administrative Training—

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Promoting Administrative Reform

Background

Primary education in Thailand is the largest system of education in the country, providing services to more than 2 million pupils, in over 30,000 schools, with more than 200,000 teachers. Primary schools are located in all corners of the country.

In the past, primary education in Thailand has been managed by many agencies: (1) the Department of Local Administration, Ministry of Interior, (2) the Department of General Education, Ministry of Education, (3) Changwad (Provincial) Authority Organization (CAO), and (4) Municipalities. Each agency has made its own plans which have been carried out by its own local units. The lack of unity in the system, as a whole, has caused a serious lag in the development of primary school education and this has become especially serious in the current circumstances of limited financial resources. It is not surprising then, that several attempts have been made during the past decade to unify primary education in Thailand. Different alternatives and models were worked out and subjected to thorough and serious analysis by committees at many levels, represented by members of all parties concerned. It was not until 1979 however, that the final decision was made to seek reform in the direction of achieving unity in education, by consolidating primary education under the direct administration of the Ministry of Education through forming a new office called the Office of the National Primary Education Commission (ONPEC). The announcement was made to take effect in October, 1979. The only minor exemption from the general requirement is that the municipalities still handle those of their own primary schools which operate in a self-sufficient way with their own local budget. There are a few schools in one municipality.

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Rationale

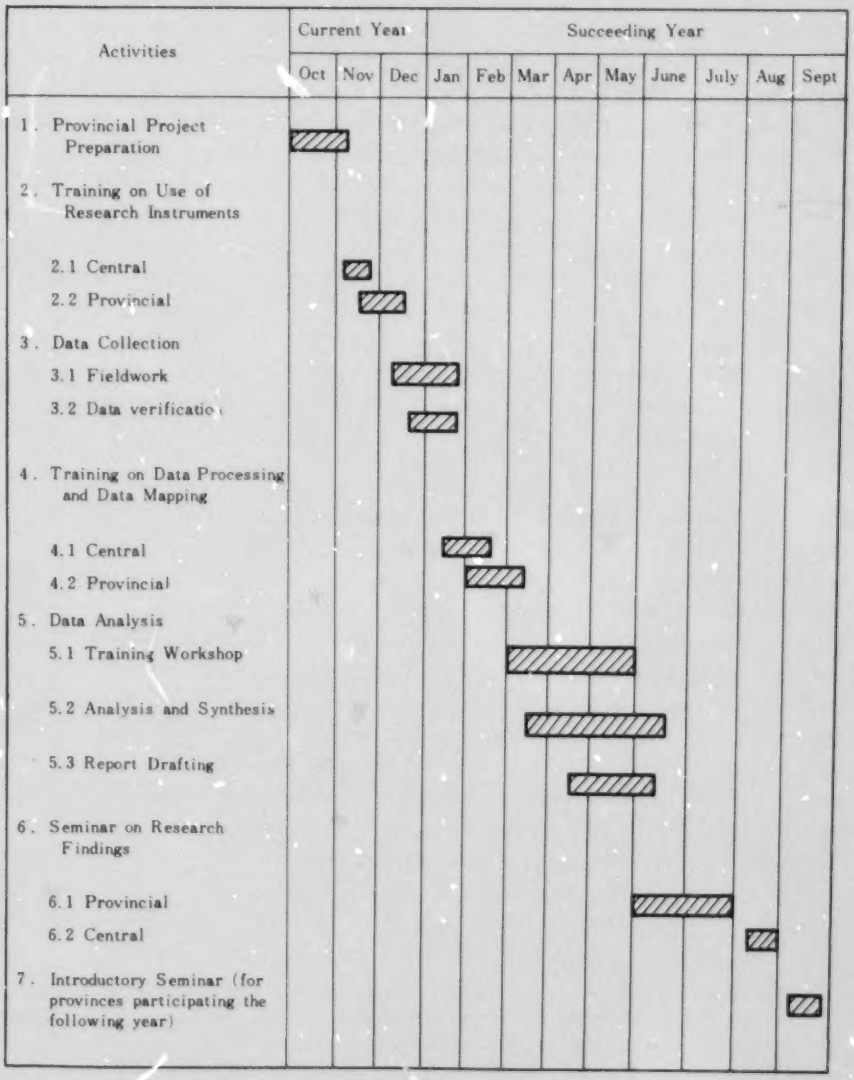
Such changes call for many structural rearrangements. One component of the alternatives selected has prescribed a greater degree of localization in the provincial primary education administration. In order for localization to be put into action however, rather than remain in words, the provisions for the preparation and development of the human resources at the local level require special attention. Taking into consideration the traditional practices of strong centralization, and long-standing habits in the local reliance on central planning and policy decision-making, the priority for training of local staff has become a search for ways and means to arrive at a possible localization of educational administration. The Office of the National Education Commission (NEC), being a neutral and coordinating agency for national education policies and for the formulation of plans, has therefore taken a leadership role in launching a five-year World Bank financed project called 'School Mapping'.[1] The approach adopted in this project will be to employ research procedures as a tool to arrive at local educational planning.[2]

Nature of the Project

The essential content of the project takes the form of a series of on-the-job training tasks which include identification of basic educational data, research instruments, data collection, data processing (manually) and data mapping, data analysis and synthesis, identification of educational problems and solutions to the problems, and formulation of a local educational plan. The project aims at national coverage which means that each of the 71 provinces of Thailand will be engaged, in its own locality, in all phases of the activities described above, and also in analyzing its own data and preparing its own indicators. Following upon each of the training modules set simultaneously for groups of provinces, each individual province will work out the content and data to be used in training by its own local teams, at the district and provincial level. The Implementation Schedule Chart (Chart 1) on the next page will give a clearer picture on what kind of training the central unit (NEC) will organize for provincial/district teams and the activities which the provincial/district teams will carry out after each of these training

1. For an account of the role of the National Education Commission, under the Office of the Prime Minister in taking responsibility for other projects to advance educational policy and long-term planning, see Sippandonda Ketudat and Gerald Fry, "Relations between Educational Research, Policy, Planning and Implementation: The Thai Experience", *International Review of Education*, Vol. 27, No. 2, 1981.
2. For a useful account of the way in which research and other sources of information have been used hitherto in the administration of Thailand's education system, see Vichai Tunsri, "Thailand" in *Information: An Essential Factor in Educational Planning and Policy*, Edited by George Psacharopoulos, Unesco, Paris, 1980.

Chart I Implementation Schedule (October of the current year-September of the following year)



sessions.

It should be emphasized that Thailand's School Mapping Project is concentrating only on primary education. Its operational scheme has been planned into two phases: a pilot study (1978/79) and the core project (1979/80—1982/83).

The scope of the project can be identified as follows:

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1978-79 Pilot studies in one demonstration district in each of the provinces of Chonburi, Kanchanaburi and Pitsanulok.

1979-80 Core project in 16 northern provinces, including Pitsanulok, two remaining pilot provinces and one northeastern province, totalling 19 provinces altogether.

1980-81 Core project continues in 15 northeastern provinces, six eastern provinces, one central province and one southern province, totalling 23 provinces.

1981-82 Core project extends to cover all 29 remaining provinces, 15 of which are central provinces and 14 are southern provinces.

1982-83 A synthesizing of the research findings for all 71 provinces, based upon which national educational policy and educational development plan is to be drawn up.

A national conference to be held with participation of top echelons in educational circles and other areas related to educational development.

Expected Outcomes

The expected outcomes of the project are as follows:

(1) trained local personnel in research for planning;

(2) a local data base system; and

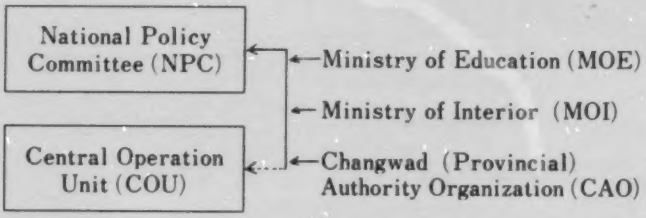
(3) a justified and equal distribution of educational resources for equality of educational opportunity and quality.

Through this project the process of research and planning is expected to be injected to the local educational administrative system as an indispensable part of its operations. With the readiness of the local staff to perform their tasks, it is assumed that this achievement will represent a step forward in making possible the localization of educational administration.

Types and Content of Programmes and Methodologies Used for Training

Infrastructures

The administration of the project as a whole is under the direction of three major organizational committees, as presented below:

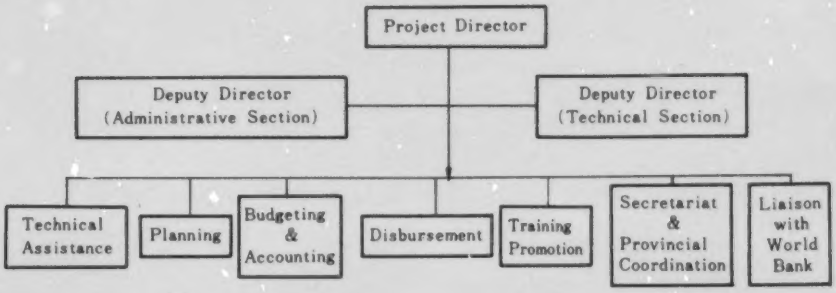

National Policy Committee (NPC)
Central Operation Unit (COU)
Ministry of Education (MOE)
Ministry of Interior (MOI)
Changwad (Provincial) Authority Organization (CAO)

Provincial Operation Teams (POT)
71 provinces

The National Policy Committee (NPC) appointed by the National Education Commission consists of high ranking educational administrators representing the Ministry of Education (MOE), the Office of the National Education Commission (NEC), the Office of the National Economic and Social Development Board (NESDB), the National Statistics Office (NSO), the Budget Bureau, Ministry of Finance (MOF) and the Office of University Affairs (OUA). This committee formulates policy and provides guidance and approval for project plan and operation.

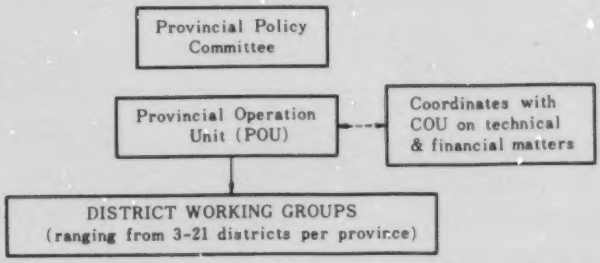
The Central Operation Unit (COU) administered by the NEC has the responsibility for preparing the project operational plan, administering the central unit operation, coordinating provincial projects, organizing training courses and seminars, developing technical papers and manuals, providing technical and financial assistance to provincial projects, liaison with the World Bank and so on. The structure of the COU may be shown as follows:

Central Operation Unit (Located at the Office of the National Education Commission)



The Provincial Operation Teams in turn are organized, in essence, as follows:

Provincial Operation Teams


Provincial Policy Committee
Provincial Operation Unit (POU)
Coordinates with COU on technical & financial matters
DISTRICT WORKING GROUPS
(ranging from 3-21 districts per province)

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Some provinces may have added additional auxilliary committees to their Provincial Operation Unit. However, all of them, at least, appoint the three levels of committees within their provinces. The number of districts in each of the provinces varies from 3 to 21 districts, and there is a total number of about 600 districts in the country as a whole.

Types and Content of the Programmes

Each programme is designed mainly to cover three activities: training workshops, seminars, and field tasks or on-the-job activities. These activities are planned step by step, in sequence, so that one is prerequisite to the next. It becomes very important therefore for each province to complete each step according to the schedules agreed upon, so that it may join in the next set of activities. Table 1 to follow will give further details on the content of each type of programme, the composition of participants and the length of the programmes.

Table 1 Types and Content of Programmes

Programme	Contents	Participants	Length
1. Introductory Seminar	Aspects of project : background, significance, objective, planned activities, training, manpower and qualifications, cost, funding resources, etc.	Provincial top educational administrators of operating agencies (4 from each province plus 1 representing each college or university offering teacher training programmes for a degree)	3 days
2. Training on Project Execution	How to plan a workable proportion of manpower, time and money in order to achieve proposed objectives. How to coordinate with the NEC on the disbursement procedures. How to prepare financial plan to cover all of the expenses of required activities and yet not to exceed amount allocated to the province. How to coordinate with NEC on other aspects in relation to provincial project execution.	2–3 members of provincial project secretariat from each participating province.	2 days
3. Training on Use of Instruments	Types of data to be collected, data sources, instruments used and collection techniques.	Provincial technical staff or project instructors (very often include talented district team members; 3–8 persons from each province)[3]	3 days

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Programme	Contents	Participants	Length
4. Training on Data Processing and Mapping	Tabulation of data for convenient manual processing. Tabulation tables are provided. Data are compiled and mathematically processed to obtain indicators for further analysis. Data are also mapped by the districts to give visual effects.	Participants are same as in 2. When provincially organized all members of district teams participate. And it is learning-by-doing (30–100 participants.)	Centrally organized – 5 days
5. Workshop on Data Analysis	Analysis of socio-economic, school environment, school facilities, demographic variables, pupil's basic skills, educational indicators, synthetic indicators, homogeneous zone, correlation techniques, linear equation, lorenz curve, school catchment area, primary school age population projection, classroom planning, identification of problems and solution, etc. The approach is learning-by-doing, meaning that trainees use the actual data collected in their respective responsible areas in executing the exercises.	Each workshop held takes in about 90–130 participants. Workshops are organized from 5–8 times each year. Provinces are given a quota ranging from 20 to 80 persons depending upon the size of the province (In this stage, number of trainees range from about 800–1,000 persons each year).	10 days (excluding weekends)
6. Other Activities	Activities which are carried out in relation to what the provincial project members have been trained to completion. It is actually practiced in the process of training. The process is a one-year course from knowing data to data analysis and synthesis for local administrative decision-making in the formulation of long and short-term educational development planning.	Local educational administrators and officials.	See Chart 1

3. When provincially organized, those who collect data are not restricted to appointed district teams but may include all chairmen of the school clusters or almost all of the primary school principals. At this level participants range from 50–300 persons per province. Provinces often hold training on more than one locale in accommodate all participants.

Methodologies Used for Training

The Central Operation Unit has a 27-member team of technical assistants. Most of them have been selected from the provincial teams in the previous years, and they act as resource persons during the training courses. They also meet to develop training courses and materials, throughout the project. In general, the COU technical assistance teams train representatives from Provincial Operation Units and these representatives, in turn, train their own district teams. There is one exception, namely, for training in data analysis, where the district teams receive training directly from the Central Operation Unit in order to achieve maximum proficiency. This component is considered to be the most delicate and complicated, of the knowledge and skill to be acquired through the programmes. The COU technical team members outside the Office of the National Education Commission also have their own regular jobs and positions with other educational agencies, but are called as needed to help the project during the training and development of courses and materials. On the less technical subject matters, seminars are held for representatives from the provinces to exchange experience in the areas of research and planning and its relevance or application in the general management functions of the provinces.

During the training courses, lesson plans are identified and trainees are provided with manuals and exercise sheets for the tasks to be learnt. The COU technical assistance team provides lectures on each topic. As the trainees study or work on the exercises, the remaining members of the technical assistance team help the trainees on an individual basis, at a ratio of one assistant to 12—20 trainees.

The sequence of the relationships which are occurring between COU and POU during the course of the project can be linked up as illustracted in the following chart.

Since the core project began in the fiscal year 1979—80 the Central Operation Unit at the NEC has involved 19 provinces in the first year, 23 provinces in the second and 29 provinces in the present year. This means that a vast number of local educational personnel have been involved in provincial projects and Table 2 summarizes the number of persons participating in the various activities of the project. However, since this project is a one-year project (at provincial level), the persons participating in the different activities may be the same persons who go through series of training with exceptions of provincial field staff participants where the majority of participants are one-time participants.

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TRAINING ACTIVITIES

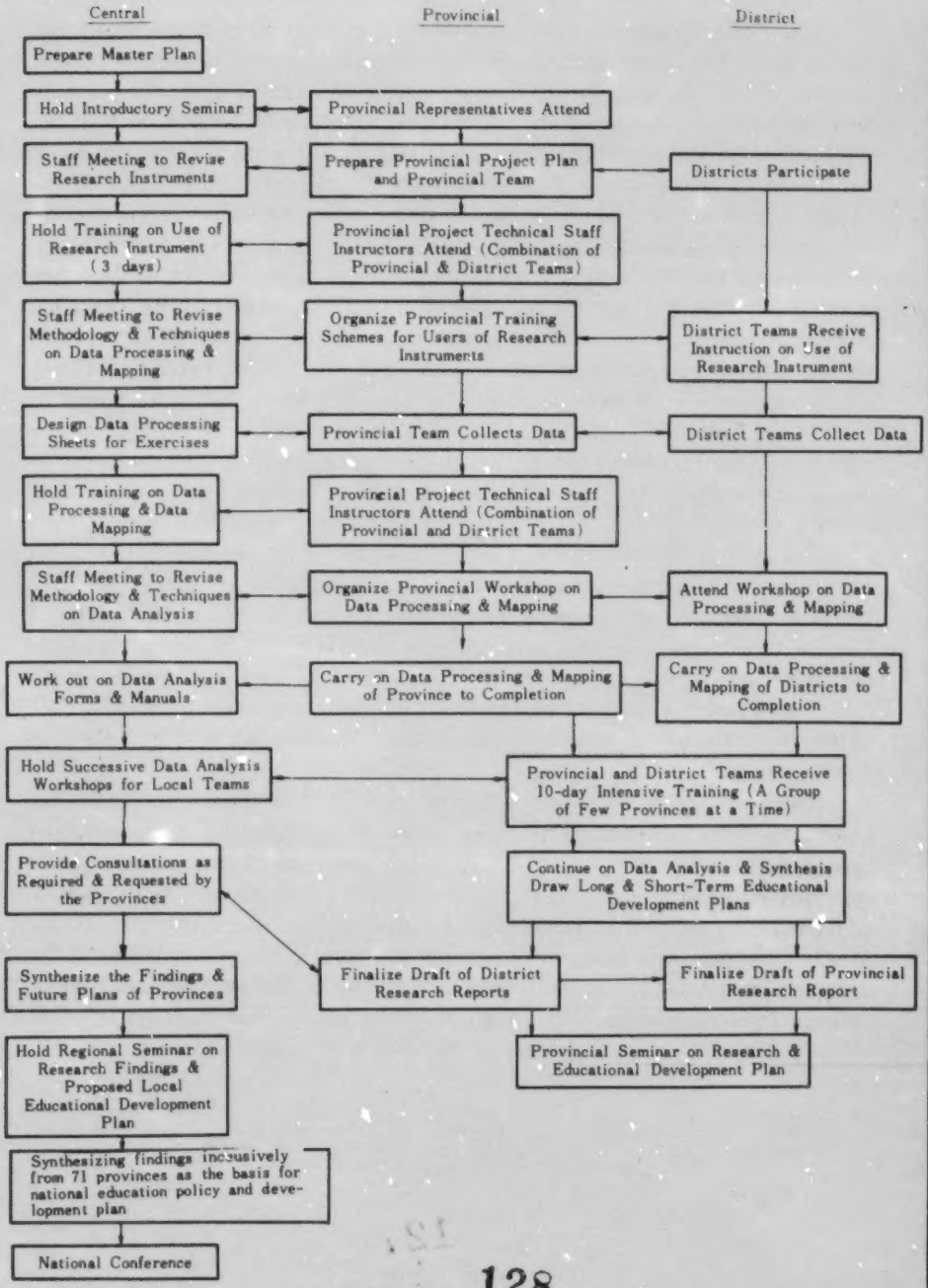
Central
Provincial
District
Prepare Master Plan
Hold Introductory Seminar
Provincial Representatives Attend
Staff Meeting to Revise Research Instruments
Prepare Provincial Project Plan and Provincial Team
Districts Participate
Hold Training on Use of Research Instrument (3 days)
Provincial Project Technical Staff Instructors Attend (Combination of Provincial & District Teams)
Staff Meeting to Revise Methodology & Techniques on Data Processing & Mapping
Organize Provincial Training Schemes for Users of Research Instruments
District Teams Receive Instruction on Use of Research Instrument
Design Data Processing Sheets for Exercises
Provincial Team Collects Data
District Teams Collect Data
Hold Training on Data Processing & Data Mapping
Provincial Project Technical Staff Instructors Attend (Combination of Provincial and District Teams)
Staff Meeting to Revise Methodology & Techniques on Data Analysis
Organize Provincial Workshop on Data Processing & Mapping
Attend Workshop on Data Processing & Mapping
Work out on Data Analysis Forms & Manuals
Carry on Data Processing & Mapping of Province to Completion
Carry on Data Processing & Mapping of Districts to Completion
Hold Successive Data Analysis Workshops for Local Teams
Provincial and District Teams Receive 10-day Intensive Training (A Group of Few Provinces at a Time)
Provide Consultations as Required & Requested by the Provinces
Continue on Data Analysis & Synthesis Draw Long & Short-Term Educational Development Plans
Synthesize the Findings & Future Plans of Provinces
Finalize Draft of District Research Reports
Finalize Draft of Provincial Research Report
Hold Regional Seminar on Research Findings & Proposed Local Educational Development Plan
Provincial Seminar on Research & Educational Development Plan
Synthesizing findings inclusively from 71 provinces as the basis for national education policy and development plan
National Conference

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Table 2 Involvement of Provincial Participants

Activities	Number of Participants		
	1979/80 19 provinces	1980/81 23 provinces	1981/82 29 provinces
1. Preparation			
Introductory seminar	98	120	135
Training on project execution	45	56	
2. Use of Research Instruments			
Central	70	92	115
Provincial (approximately)	1,000	1,550	1,600
3. Data Collection			
Fieldworks (approximately)	1,000	1,550	1,600
Data Verification (approximately)	258	345	435
4. Training on Data Processing and Data Mapping			
Central	89	115	144
Provincial	500	800	720
5. Data Analysis			
Training Workshop	500	800	720
Data Analysis & Synthesis	400	640	576
Report Drafting	300	480	432
6. Seminar on Research Findings			
Provincial	570	690	870
Central	98	120	135

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TRAINING FOR EDUCATIONAL RESEARCH IN SOCIALIST REPUBLIC OF VIETNAM

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National Institute of Educational Science, Vietnam

Introduction

Educational research and the training of scientific research workers are two important responsibilities of the National Institute of Educational Science of Vietnam. We therefore support unanimously one of the conclusions drawn up three years ago by the Regional Seminar on Educational Research in Relation to Educational Reform in Asia and Oceania. That Seminar, in 1979, also organized by NIER of Japan, emphasized "that with a view to developing a self-sustained research capacity in each member state, training of educational research workers be given high priority".

In the process of building and development of the National Institute of Educational Science (NIES) of the Socialist Republic of Vietnam we have held the same view. When it was set up in 1961 to help combat foreign aggression for national independence and unity on the one hand, and to promote the building of a socialist society according to the scientific development policy of our country on the other, our National Institute of Educational Science had only few research groups with a small body of researchers in different subjects. They were mainly research probationers. Now, after 20 years of development, with the great assistance of the Soviet Union and other socialist countries, our Institute of Educational Science has 13 research departments with a contingent of over 300 researchers including higher education graduates, doctors and candidates. This is a contingent of researchers who have the capability for formulating and carrying out immediate and long-term research programmes. They have written many articles, textbooks and monographs, and these may be considered as the first brick of educational science in our country.

One may say that this contingent of researchers is the most valuable product of 20 years of building and development at NIES. From the knowledge and experience they have developed over that period this contingent also provides the authors of the many textooks, monographs and other documents now used to train

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* Note: This revised paper has been prepared with the collaboration of Mr Phi Van Gung, member of the International Cooperation Section of NIES.

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young educational researchers. This result is of course one of the outcomes of the attention our government has given to educational science in its drive to overcome hardship and difficulties, as well as to the great endeavours of our scientific workers.

At present we are reviewing the training process of researchers in our Institute to identify the most significant experiences and lessons to be drawn out. Hence we are very interested in the experience of other countries in this sphere. We are sure the experience and thinking shared here among our colleagues will be of great value for us. It will help us to see more clearly the strong and weak points of our past record and at the same time it will help us to introduce innovations in the training of our young educational researchers in the years ahead. This is the reason why we have welcomed the decision of the Unesco General Conference, at its twenty-first session, to organize a Regional Seminar for Training of Young Educational Researchers. We are very happy and honoured to attend this seminar organized by the National Institute for Educational Research of Japan in collaboration with the Japanese National Commission for Unesco, and the Ministry of Education, Science and Culture of Japan, and the Unesco Regional Office for Education in Asia and the Pacific within the framework of APEID.

Educational Research and Practice

In its years, all research works in our Institute were carried out in a scattered way according to each researcher's capacity. There were themes on the teaching methods of a subject, on psychological process of a certain age level, and on educational history, etc. It should be noted that between these themes there were little or no coherence.

However, right from the beginning, research activities had been carried out according to the guideline that "theory should be linked with practice", and the results of research projects in past years have contributed to educational practice in Vietnam. The notable works have included:

—Documents for disseminating general knowledge on educational science for teachers; and

—Documents on educational surveying, and the development of an index of psychology and physiology, prepared for the educational reform.

We have also taken part in compiling:

—Some curricula and textbooks of subjects taught in general schools, especially mathematical curricula, and textbooks of the first form levels;

—Study on the policy of educational reform, and so on.

In the research programme from 1978-1980, the themes were more concentrated and pushed up a step ahead in realizing the guideline "theory should be linked with practice". The results of the research work carried out during the past three years have had a major impact on educational innovation and

educational reform through the following documents:

—State's resolution on the educational reform in Vietnam (announced in early 1979);
—Document of stipulation for new general educational system (announced in April, 1981);
—Subject curricula for all forms graded from the first to the twelfth (passed by National Subject Council in early 1981);
—Constitution of the general education school (announced in 1980);
—Family education (published in 1979);
—Mathematics textbook for first form, according to curricula of reformed education (published in 1981);
—Textbook for first form, according to curricula of reformed education;
—Stipulation of the government on career-orientation in general education school and the assignment of graduates of the low and high middle-level schools (issued in 1981).

Research Plans for the Next Five Years (1981-1985)

For the five years ahead, the research programme of our Institute will centre on researches into teaching and learning at different levels over 17 areas as follows:

Problem One: Strategy for Educational Development

Studies of the relationships between education and the economy, science and technology, ideology and culture and national defense. The aim will be to identify the typical and new factors in education and the trends of education in the world, in order to contribute to the forecasting and long-term planning of education and to propose objectives and strategic methods for the building and development of education in the transitional period.

Problem Two: Reviewing Experience Historically

These studies will analyze and evaluate the lessons of experience in the past five years (1975-80); complete a historical review of a 35-year development of education in our country; make preparations for an account of educational progress in our country over 40 years (1945-1985) including a summary of the five years to come (1980-1985).

Problem Three: Child Development and New School Models

These enquiries will try to evolve new school patterns experimentally which comply with the optimal developmental capacity of Vietnamese children. This requires studies of the capability and characteristics of the psychological development of Vietnamese children so that new conceptions of educational content, method and organization may evolve in response to the normal physical and psychological development of children.

Problem Four: Primary School Education

To improve and maintain the quality of first-level general education, studies

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are required of the problems of pedagogy and age-group psychology or their relation to the teaching methods or the subjects taught in primary schools. The national objective is to foster the development of primary education throughout our country.

Problem Five: Educational Development in the Mekong Delta

The objective is to set up an appropriate system of schools in the Mekong Delta (school networks, school-year planning in a flooded area, for minority populations, vocational education and the assignment of graduates) as a contribution to the development strategy of the area. The curriculum and teaching methods chosen by the schools of the Mekong Delta need to be in accord with the objectives of collectivization and agricultural production in the area.

Problem Six: Theory of Curriculum Content

The purpose of these enquiries will be to modify and finalize subject curriculum or other educational activities in line with current reforms. The aim is to ensure the successful realization of the development steps required for new educational content that gradually builds up the theory of socialist training in the general schools of the country.

Problem Seven: Teaching-Learning Methods

To study and apply up-to-date teaching and learing methods in order to contribute to the effective realization of the training goals of Vietnam. Initially, the aim is to set up the theoretical and practical foundations for a strategic orientation to basic content.

Problem Eight: The Marxist World Outlook and the Revolutionary Ethics

The purpose is to study the ideal, political and ethical situation of pupils and to analyze the causes of the strong as well as the weak aspects so that content may be modified. The aim is to improve the quality and the effects of education on a Marxist world outlook and revolutionary ethics for our young generations.

Problem Nine: Combating the American Neo-Colonial Influence

The objective of these enquiries is to criticize theoretically and overcome the adverse effects of the American neo-colonialist education in the southern part of the country in general and on pupils in the schools of Ho Chi Minh city in particular. From these analyses, new policies should be suggested.

Problem Ten: Labour and Vocational Education

To study the ways of organizing scientifically all kinds of pupil work, as well as the activities of polytechnic centres, in order to improve the quality and effects of labour education in the general education of all children. To assist the general education schools in carrying out vocational education, there will be reviewing of their objectives and their theory of vocational methods so that these contribute to the purposes of 'school and production'.

Problem Eleven: Physiological and Physical Development Indexes

These indexes are derived from surveys of Vietnamese children and studies of problems of physical training and school hygiene at each age level and by sex. They

provide a basis for innovation in the content and methods of physical training in general education schools and for identifying and fostering talented pupils in the field. This work also includes studies of school hygiene so that criteria may be set forth.

Problem Twelve: Special Education for the Physically and Mentally Handicapped

The task here is to set up criteria for the classification and selection of pupils to attend schools for the handicapped, and to prepare curriculums suitable for each category of handicapped children (deaf, dumb, blind, mentally retarded, etc.). This also includes setting up regulations for these schools and finding appropriate teaching methods for handicapped children.

Problem Thirteen: Innovations in Organization and Management

This involves studies of the administrative work of the directors of schools for general education including the finalizing of school constitutions and the setting up of other regulations. The aim is to stimulate innovation in management at all levels and especially the national organization of educational networks so that the organization of education meets the needs of educational reform and builds up management theory in our country.

Problem Fourteen: Second-Level Pupils

These tasks require us to identify, analyze and confirm the types of activities of second-level pupils, in order to point-out their laws, and to contribute to the development of a scientific foundation for measures to improve the impact of teaching and learning in secondary schools of general education.

Problem Fifteen: Nature and Structure of Socialist Education

Studies of the nature, structure and regulation of the educational process as it exemplifies the purposes of socialist education at different age levels. This includes researches into the factors of the socialist educational process and the ordering of these factors to develop a scientific foundation for the methods and measures adopted at a basic general level.

Problem Sixteen: Methodology and Management of Educational Science

To ensure educational research is relevant, these obligations require a continuing effort to make clear the problems of Marxist methodology in educational science, to promote innovations on research management, to stimulate the dissemination of research information and to advance the training and development of research personnel.

Problem Seventeen: Application of Research Knowledge

Finally, the continuing commitment is to use educational research findings and knowledge to advance teaching, learning and educational management to serve immediate policy and to develop, maintain and improve educational quality.

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Educational Research and the Training of Young Scientific Researchers

Research activities are closely linked with training at the National Institute of Educational Science. These are the two functions of our Institute. One may say that one function will be the premise and consequence, at the same time, of the other function.

The main force of researchers in our Institute today are experienced teachers. They have spent many years in teaching in schools from primary up to the university level. A small proportion of these teachers have received constant training, theoretically and practically, to become fully qualified researchers with the capacity to carry out successfully the many research projects of our Institute.

In recent years a great number of young cadres, having been trained and graduated from abroad, were assigned to work in our Institute. Together with the experienced researchers mentioned above, these young researchers are very active in carring out all research programmes of educational science. In addition to the research undertakings to which they are assigned, one of the requirements for these young researchers is that they study continuously to improve their scientific knowledge, to deepen their knowledge of education in Vietnam and to extend their research skills so that they become the principal research workers in our Institute in the future.

Apart from the full-time research staff of our Institute we have an abundant contingent of collaborators in educational science. They are experienced teachers at all levels of the school system throughout the country. They also include educational directors and managers in all levels from the local to the central level. Within this workforce in the field of education it should be noted that a considerable number come from related services, from vocational training services and from the staff of universities.

Nowadays, we are also associated with 36 experimental schools. For the collection of much information and daily experimental data, we have the great advantage of a nation-wide, multi-form network of collaborators and experimental schools. This has helped us greatly in promoting the principle that theory should be linked with educational practice, in ensuring the general application of the outcomes of research projects.

Accordingly, many researchers in our Institute undertake their daily work in experimental schools, and in these schools many teachers are collaborators. When a new teaching method has been suggested for a particular subject, the researchers have the responsibility for guiding the teachers of subject in the way to teach, in helping them to sum up their experience and working with them on new lesson programmes. Through this process, step-by-step, many teachers become researchers.

The research staff of our Institute is thus divided into three distinct groups:

(1) researchers, (2) research probationers and supporters, and (3) collaborators in research. On the basis of these categories we may assign approriate tasks to each group so that they are able to give their best in contributing to the common cause of educational research.

For the organization and management of the training of educational research personnel our Institute has a Department of Scientific Research Management which shares the task with other sections through a Scientific Council. These two organizational components assist the directorates in selecting researchers, identifying the training programme and in inspecting and evaluating the results in the light of the needs and educational practice of Vietnam. It should also be noted that we often collaborate with universities and with other vocational training and related services to carry out strategy-level research projects and programmes.

An evaluation of the results of research programmes has also been carried out annually. Through such reviews the strong as well as the weak points to be overcome in the coming years are pointed out. Among the criteria used to evaluate the result of the research programmes in our Institute two should be mentioned here. First, we are interested in whether a project has contributed actively to the development of educational science in a theoretical sense; secondly, whether it has contributed to an improvement in the quality of education in the area where it has been tested, or at regional or national level. In addition, the project should have also been within budget limits. Such evaluations are normally carried out by the Scientific Council of our Institute. For a nation-wide project, such evaluations are carried out with the participation of other interested parties.

Along with the development of research programmes, the training and development of young researchers has also been given high priority. Since the majority of our staff, except those trained abroad, were not completely trained as educational researchers we have had to plan courses of training for them. In the Department of Scientific Research Management there is at present a section that takes care of training and development under the direct leadership of the deputy director of our Institute. The training is carried out nowadays as follows:

Young researchers assigned to work in our Institute belong to two groups:

(a) Gradutes of higher education in psychology, pedagogics or educational psychology; and

(b) Graduates from other fields.

Graduates of both groups are assigned to work in all research departments on experimental activities and trained to become researchers through inservice courses.

During the first stage, lasting from 2—3 years, the training programme for both groups has common elements, as well as distinctive features. The common points are:

—Service as research probationers in practical research groups;

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—Introduction to the specialities of educational science (e.g. psychology, pedagogics, subject teaching methods, age-group physiology, etc.); and

—Experience with educational practice in general education schools (those not teaching in general education schools have to take part for 20—30 hours in teaching a particular subject).

The distinctive features are that the graduates who have not had training in psychology or pedagogics have to attend a basic course (over 18—24 months) in educational science. This course is implemented through lectures, writing essays and teaching in schools.

In the first phase, the content and training programme for young researchers in both groups must be aimed at making them interested in educational research, providing them with a basic knowledge and competence in research skills and gradually forming (or consolidating firmly) a professional outlook for them. These are important components in a researcher's personality since ideals form the nucleus of style and personal philosophies. We like to give ample attention to this because we recognize that good educational research depends very much on the interests of the individual research person.

Those who passed examination of the first stage will continue to attend training courses at the second stage (also lasting from 2—3 years). This is the phase of further education. The curriculum of this stage is to continue with further basic theory from the books, 'Introduction to Psychology' and 'Educational Methodology'. In this phase too, that prospective research worker takes up an element of the research theme of their research groups or engages in laboratory work in the Experimental Department on Children's Psychology and Pedagogics, and writes a scientific report. The evaluation outcomes of the first training stage are mainly based on the basic knowledge of educational science and their interest in educational research, whereas the evaluation of the second training stage will be their passion and attachment to the research work revealed in their research thesis.

Also in the second training stage, a study of a foreign language (Russian and English) for young researchers will be promoted. The elementary and secondary courses will be opened frequently in the afternoon. At the same time a refresher course lasting from 6—12 months will be set up. This is one of our great difficulties in training young researchers. In addition to this during the training we have to face other difficulties in applying mathematical, cybernetical, probability and statistical skills in educational research.

Conclusion

In summary, the training of young educational researchers has always been a strategic responsibility of our Institute. This task helps to shape the future of our

Institute in particular, and of educational science generally in our country. It also helps to improve level of knowledge shown by those who offer the training and also the quality of the research projects being undertaken. The training programme should always be linked therefore to the research programme.

In addition to the provision of a basic knowledge in educational science for young research workers, we also instruct in philosophy, calculation methods, the ethics of educational research, and other integral factors forming the general culture of educational research workers. During the training process special attention should be given to forming and developing research interests, or in a broader sense, the professional ideas of the educational researchers. We consider this an incentive, just as a required knowledge of social and technical advancement helps to decide the success of scientific research.

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INNOVATION IN POLICY-ORIENTED RESEARCH
—The Example of the North Solomons Education Research Project—

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This paper starts by focussing on an innovatory research project in one province of Papua New Guinea, known as the North Solomons Education Research Project (NSERP). Its relevance lies in its attempt to base a transformation of education in one province on intensive, policy-oriented research. To begin, I shall outline how this new project relates educational research to educational practice. Then I shall consider the kind of preparation and training that is needed by a young researcher to participate in such a research programme, and what training is currently available.

Relationship between Research and Practice

There are two notable features of the way in which the North Solomons' project has sought to relate research and practice. The first is the decision made by the North Solmons Provincial Government to commission research to provide a conceptual basis, as well as the catalyst, for educational innovation in the province.

The second feature has been the requirement of the Provincial Government that a researcher, drawn from the University of Papua New Guinea's Educational Research Unit, should be involved in all stages of the process of innovation from the initial field research to the presentation of findings and recommendations to government. This has subsequently led to participation in the planning, implementation and evaluation of specific innovations.

Let us begin by taking a brief look at the objectives of the project, and the research activity associated with innovations being introduced in policy, curriculum and institutional contexts.

A. Objectives of the Project

The North Solomons Education Research Project is attempting to build a comprehensive educational strategy ranging from the pre-school years through to adulthood. It seeks to relate educational provisions to local and provincial

aspirations through consultation with parents and the community and research-based planning. Essentially, its three primary objectives are:

1. To Introduce New Emphases in Education

The North Solomons Province led moves made to establish the provincial government system in Papua New Guinea. It is now anxious to use its new decentralized powers to redirect and emphasize certain aspects of education in response to the impact of large-scale mining, urban development, and the introduction of a national education system on community life, especially in rural areas.

Among specific developments requested during a survey of community aspirations were literacy in the mother tongue and cultural education; the formation of moral qualities in children to promote a sense of responsibility, respect and cooperation in preparation for community life; more specialized practical and vocational education for youth; and the promotion of social, cultural and political awareness at community level.

2. To Improve the Quality of Education

The second objective is to improve the quality of education in the province. This reflects a concern over the poor performance of many community (primary) schools, and the manner of selecting students for high school entrance. The relevance and effectiveness of training opportunities for school leavers, and of rural extension and communication programmes has been another cause for concern.

3. To Improve Access to Education

The third objective has been to improve the opportunities of children, youth and adults by geographical placement of schools to see whether their location may be deterring children from attending.

B. Meeting the Objectives : Research Activity Related to Innovations in Curriculum Policy and Institutions

The process of innovation in the North Solomons Education Research Project has taken place in three over-lapping stages: an information-gathering phase, a decision-making and planning phase, and an implementation and evaluation phase. The research activities associated with each of these stages may be characterized as follows.

1. Information Gathering Phase

The main activities in this phase are:

(1) Surveying of Opinions and Attitudes

This has involved surveys of parents, teachers, school boards of

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management and community governments to gather information on their needs, goals and aspirations, as well as their ideas and proposals, as a preparation for policy-making and innovation. Interview schedules and guides have been used to collect such data, and graduates living in rural areas and tertiary students have been employed as researchers.

(2) Data Collection and Analysis

Examples of data collection related to innovations in pre-primary, primary, secondary, post-school and tertiary programmes are as follows:

Viles Tok Ples Skuls: These are village vernacular schools offering a two-year, pre-primary programme emphasizing literacy and cultural education. Initial research activities included a mapping of the distribution of vernacular languages and dialects spoken in areas of the province, and the determination of the human, material, and financial resources available and required for the scheme.

Experimental Community Schools: These are existing schools which are trialling curriculum innovations emphasizing social and practical skills for community life. The initial research activities have included comparisons of vernacular and English concepts and their language relation to children's understanding of key elements of the mathematics and science syllabus and the systematic recording of traditional games of children and their social purposes.

Location of Community Schools: A policy of locating new schools in places where it has been shown that children have difficult access to existing institution because of geographical barriers is being planned. The initial research has involved the mapping of the location of community schools and preparing estimates of walking distances from children's houses, road access, and geographical barriers.

High School Selection: The initial research has involved a computer analysis to predict statistically the effects of five alternative selection procedures on the high school intake from individual community schools and districts, the proportion of children admitted with high and low examination scores, and the outcome on an index of equity and efficiency. The base-line data was drawn from past examination records. The new policies resulting from this research will offer improved efficiency in selecting the most able students academically, while maintaining reasonable equity between schools and districts in the province. This research has also involved the identification of poorly-performing community schools and the reasons for this, using examination records, school visits and focussed interviews.

Youth and School Leaver Programme: This programme emphasizes social and technical training for out-of-school youth and youth groups to help them establish projects. The initial research has involved focussed interviews with key resource people, and an analysis of existing provision.

Communications Programme: This programme is aimed at developing media such as film, video, travelling theatre, and a news magazine to create social awareness and debate at the local level. Initial research has included the analyses of costs and benefits of alternative communication media and forms of distribution, and a content analysis of a proposed educational film script, to examine its actual and intended message.

University Centre: A university extension centre for continuing education caters in part for those holding public office as well as those with limited earlier educational opportunities. Initial research has included the surveying of demand for particular kinds of study courses, by postal questionnaire.

2. Decision-Making and Planning Phase

The main activities involved in this phase are:

(1) The Presentation and Interpretation of Findings and Recommendations to Policy Makers

This may further include the presentation of research reports and proposals through the press and radio, as well as through academic seminars, and meetings of teachers, school boards and local government officials where their views on policy options are sought.

(2) The Relating of Research Findings and Recommendations to Planning for Implementation

This includes collaboration with the planners and staff of government and non-government agencies in drawing up plans for designing and implementing innovations, including pilot schemes for their trial and evaluation.

3. Implementation and Evaluation Phase

This phase requires continuous monitoring of innovations and feedback as they are implemented (formative evaluation), as well as assessments of how well pilot schemes have met their objectives over a period of time (summative evaluation). The research activities of this phase are diverse but they include participant observation in classrooms and communities, studies of comparative achievement, as well as the assembling of attitudes and opinions.

C. Conclusion

One conclusion which may be drawn from this summary of the North Solomons Education Research Project is that a wide variety of research skills and activities have had to be employed to respond to the demands that arise from a comprehensive programme of innovation in educational policies and institutions. These range from field interviewing to classroom observation, from the computer analysis of the interaction of variables to report writing and the presentation of

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findings to widely varying audiences. We may now examine the question of the types of training and experience which may be required of a young researcher, called upon to participate in or to coordinate a provincial project of this type.

Training Needs of Young Researchers

In considering the training needs of young researchers in this context, the first question to be asked, who are the researchers and what sort of things will they be doing?

To date, the NSERP has employed one professional research worker, a staff member of the Educational Research Unit of the University of Papua New Guinea, who has been able to give his full-time attention to the project. His task has been to coordinate all aspects of the project and to execute those parts within his professional competence. He has also engaged colleagues from the Research Unit and the University's Department of Education in Port Moresby, and visiting researchers from other countries to take part in collaborative research.

These resources are not always adequate, however, to cover the scope of the research activity required by the project. It has been noted already that university students have been employed in field surveys, supplemented by young graduates working in rural areas. They have visited people in their homes, as well as teachers, school boards, and community governments to conduct interviews. We have also noted that school teachers are being employed to carry out research into language and concept formation and children's games.

We have, then, identified two kinds of research workers requiring different degrees of training and experience: full-time professional career researchers requiring familiarity with an extensive range of skills, and students and teachers who may have an important role as temporary research assistants, but are concerned with only a limited range of activities and skills. What kinds of preparation are essential for a professional researcher coordinating such a project and preparing others for participation in it?

A. Preparation for Research: Orientation to Scientific Thinking

Educational research is largely concerned with exploring human and social phenomena, and with scientific ways of thinking and explaining these phenomena. But scientific enquiry is only one way of understanding human reality. For many students in Papua New Guinea it is not a deeply familliar way of conceptualizing events or behaviour. To learn it requires a demanding apprenticeship. As one young researcher put it, "it is a new culture". In the 10 years since the Educational Research Unit was created at the University of Papua New Guinea, only three Papua New Guineans have chosen to find a career in it and one of these has already departed.

Hence our starting point in training young research workers may need to be the development of certain attitudes and approaches to the nature of research. The purpose should be to give them a broad understanding of the processes of scientific enquiry, and at the same time to make it an activity that is attractive and exciting and not merely the application of mechanical formulas.

1. The Need to Balance Imagination and Rigour

Good research is by definition, rigorous. It is always striving to be more exact. But the rigour of technical skills, without imagination, is *rigor mortis*: it becomes dead or paralysed science. It expends great effort in telling us things of limited importance or insight.*

Imagination is needed in determining the right questions to ask and the methods to use, in formulating hypotheses and in interpreting research findings. A young researcher must grasp, then, that research is a process of imagination as well as of the rational mind. It requires flexible, critical and adventurous thinking. But imaginative research must also have rigour, or we don't know whether we can trust its explanations.

2. Recognizing the Difficulty of 'Knowing' and 'Understanding'

Experienced researchers know, contrary to popular opinion, that research rarely 'proves' anything, that it is at best a partial understanding of a complex set of inter-relationships between variables and causal relationships. A young researcher must be aware that there are many degrees of 'knowing' and 'understanding' the truth about given situations. Research often answers a few questions but throws up a lot more unanswered ones, and the novice needs to appreciate that scientific understanding comes through constantly challenging received truths.

One way to interest and attract a young researcher to the field is to show how its enquiries have much in common with those of a detective. Why do children who must walk for hours over difficult terrain to reach their school have higher attendance rates than those who live nearby? Why do children on remote islands in the ocean outshine many urban children in learning English, although it is rarely spoken in their community?

The answering of such questions is often like peeling the layers off an onion to get to a deeper level of understanding. It may require subtle investigations into people's historical experience. This involves another kind of 'knowing' not easily susceptible to common research techniques. A researcher must be prepared to change his or her mind, to challenge conventional thinking, to detect the critical variations that may be disguised by statistical averages, to adapt research techniques for finding things out according to the processes of communication in a

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* See Bateson (1) in the Selected Bibliography.

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particular culture.

In sum, our experience suggests that the young researcher must set out with few pre-conceptions, understanding how difficult it is to make valid generalizations or to apply existing theories in a complex social situation, and realize that research methods may be a sensitive way of 'finding out' or they may become a trap which limits the researcher's understanding. The hardest thing for the young researcher is to prevent emotional biases from affecting the soundness of his judgement, and to accept outcomes of research which may contradict his or her strongly-held convictions. This is the reason why scientific enquiry is a hard taskmaster. At any time it may show us to be wrong.

3. Recognizing the Importance of Communication and Human Interaction

For research which is largely concerned with human social phenomena, the relationship of the researcher to the people whose lives are being investigated may often be the determining factor in what he or she comes to find out and understand. Where research involves interviewing or participant observation in the field, qualities of human sensitivity, cultural awareness and skill in communicating must go togetner with a textbook knowledge of research methods. This is a priority area in training young research workers to cope with diverse socio-cultural contexts.

With regard to such awareness, colleague and young fellow researcher has commented:

> It is important in Papua New Guinea for researchers to be simple persons. The researcher's personality and actions must be consistent with the expectations of their clients. For example, where the people being studied require the researcher to eat and sleep with them, wear a laplap (length of cloth) instead of long pants, it is only advisable that the researcher acts accordingly. It is important in winning client's respect and confidence. The findings will be meaningless without such respect and confidence, but this can only be obtained through being and acting *simply*. A researcher who tries to impress village people, for instance, by wearing city clothing will find it difficult to get the information he is after. This is difficult in reality but it makes a great difference to the validity and reliability of the collected data.*

B. Preparation for Research: Purposes and Technical Skills

Starting from basic orientation toward research work, the young researcher must come to consider the *purposes* of research, its methods and techniques. We can exemplify by defining the purposes associated with the NSERP as previously outlined, and the research approaches it has employed.

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* Emphraim Apelis, personal correspondence.

1. Purposes of Research

All of the research of the NSERP so far has been applied. That is, its purpose has been to provide immediate practical assistance to policymakers, planners and those implementing plans and policies in the field. It has done this through the provision of information, the prediction of the outcomes for alternative strategies, and by consultation and evaluation. Most of the information it has accumulated has been specific to a problem. It has not been intended to validate general principles in the manner of basic research, although some aspects of the project, such as the data relating to mother tongue education, contribute in the future to the advancement of theory.

2. Research Methods and Techniques

The research methods used in the project generally fall into three broad categories: survey research, naturalistic enquiry, and research involving the statistical comparison of the outcomes of strategies or options. Historical research has also been to provide background information. These methods will be combined in future evaluation studies. A further distinct category is involved in the analysis of language concepts and communication.

(1) *Survey Research*: In an initial NSERP survey of community opinion, attitudes and ideas, a team of university students and teachers from the province worked with the research coordinator in designing the survey, including sampling, preparation of an interview schedule, the conducting of interviews, and the collation, analysis and interpretation of data which was both quantitative and qualitative. The most evident training need was in the communication skills of interviewing.

Other forms of surveying have been into the availability of resources, the location and characteristics of schools, and the distribution of languages and dialects spoken in the province. This has required the administration of questionnaires and interviews, and the use of written records and reports.

(2) *Naturalistic Enquiry*: This is being employed particularly in the evaluation of innovations such as the *viles tok ples skuls* and experimental community schools, to provide qualitative data through participant observation in the classroom and community, focussed interviews and intensive case studies. It is seeking to uncover processes of learning and socialization, and to explore parents and children's perceptions and reactions.

(3) *Statistical Comparisons*: The main example here is the study of high school selection procedures, in which the effect of five options on the intake from schools and districts was compared on an index of equity and efficiency using examination records. A longitudinal comparison of the school performance of children with and without vernacular preschool preparation is also under consideration. Understanding of experimental methods and

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statistical and computer analysis skills are pre-requisites for research.

(4) *Analytic Studies*: Skills required on these studies include those of linguistic semantic analysis to compare the meaning of concepts as expressed in different languages and cultures; and content analysis, to explore the meanings transmitted by media presentations such as educational films.

All of the research methods described are producing findings at the level of *description*, including classification and description of processes, or of *associative causality*, relating variables.

C. Communicating the Results : Presentation Skills

The above research methods and techniques apply to the information gathering and evaluation phase of the NSERP. In the decision-making and planning stage, a further set of skills is required to communicate and interpret research findings and recommendations. These are the skills of presentation. The modifications which are necessary in adapting research findings and proposals to the needs, interests and expectations of an audience is yet another demanding process of learning for research personnel. In the case of the NSERP, there have been four main audiences which have a critical interest in its outcomes, as outlined below. Each may require a particular form of written or oral presentation.

1. Presentation to Political Decision-Makers

Both written and oral reports for political decision-makers require a simple, clear, concise statements describing the purpose of the research, its findings, recommendations and policy options. The choice of language may vary for written and oral accounts. The research has the decision as to how persuasive or neutral the tone of the presentation should be, and to what extent options should be strongly argued or flatly presented.

2. Presentation to Planners and Implementors

Precision in supplying relevant detail is the criterion for such audiences, and the ability to be both persuasive and critical. The questions they want answered can be built into the original design of research so that it provides relevant information. Precise written reports followed by discussion are most often required for such audiences.

3. Presentation to Wider Public

Styles of presentation appropriate to the mass media of radio and the press are the requirement here. Giving correct emphases, and answering the likely concerns and anxieties of listeners is important.

In the NSERP, research findings and recommendations may also be taken back to the parents, teachers, school boards of management and community

government members whose opinions were first surveyed, to gather their reaction to proposed policy options and developments. This is an exercise in very simple, clear communication, including numerical presentation.

4. Presentation to Academic Audiences

Formal presentations to academic seminars and conferences are perhaps the most demanding ordeals for a young researcher, when asked to share findings among professional colleagues and practitioners. But they are also important for professional growth and development. Young Papua New Guinean researchers have identified participation in academic seminars as one of their weaknesses, and have indicated a need for proper guidance and supervision in styles and methods of presentation.

Where can Training be Done?

There are three current sources of training for young, potential research workers in Papua New Guinea:

(1) Through *undergraduate* research methods courses at the University of Papua New Guinea which give very basic skills and understanding but are not specifically directed at educational research.

(2) Through *post-graduate* studies at a university outside Papua New Guinea, usually in masters or doctoral programmes, and usually as part of the University's staff development programme.

(3) Through *on-the-job-training* in the Educational Research Unit or in the research branch of the Ministry of Education. This includes participation in research projects with experienced researchers and in research method workshops and seminars, as well as exercises in report writing and journalistic presentation. Researchers may be employed as part of long-term staff development, or as temporary research assistants.

Discussions with young career researchers suggest that they find a combination of these three training opportunities important to their development. They have indicated that research and teaching experience is important before studying overseas, to equip them with practical insight into their learning needs and the professional problems they will face in the future, as well as their country's research requirements. They also stress that they must engage in well-supervised courses and field practices relevant to the research purposes and skills they are pursuing.

In addition, *short courses for teachers* as a means of training future fieldworkers for government research projects have been held at the country's secondary teacher training college at Goroka.* These courses have also been used

* See Guthrie and Field (2) and Guthrie and Robin (3) in the Selected Bibliography.

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as a means of training potential national education researchers for the future from 'the bottom up'. There is evidence that, in addition, they have an impact on teachers' professional activities and modes of thinking which benefit their profession. This suggests there is a case for further considering the advantages of training in research for teachers and others who are not already committed to educational research as a career.

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ADVANCING NATIONAL OBJECTIVES BY RESEARCH TRAINING
—The Case of Indonesia—

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In Indonesia, the Office of Educational and Cultural Research and Development (BP3K) has had a major responsibility for advancing educational research in the past decade. Following through from earlier tasks it continues to be responsible for research related to policy issues, with the emphasis on educational development, research related to educational planning and administration, or the condition of various educational activities, alternative solutions to administrative problems and so on. Not surprisingly perhaps, in view of the foregoing, it also seeks to up-grade the quality of research being done by various units.

The faculties of education in our universities, and institutes of teacher training and educational sciences are often far apart. Some already have adequate research units but most need help to up-grade the quality and functions of their units. It is now an objective of BP3K to accelerate this up-grading process, to bring a measure of coordination and common purpose, and to stimulate a climate for research which will enable these units to grow. To ensure that their research programmes are related to and support national policies, it is desirable that a central unit has authority to monitor and manage their programmes. This is the responsibility of BP3K, in association with the Directorate of Higher Education.

BP3K's Special Interests

Within this general mandate it has to be recognized too, that BP3K also has its special interests that bear upon its own staffing, development and organization. Broadly these are identified in two types of training courses: (1) short-term training which takes 7 to 8 months, (2) graduate programme in training which takes two years.

1. Short-Term Training

Since 1979 there have been three training courses of this kind. The participants in these training courses were staff of the Regional Offices of Education and Culture from various provinces and the research staff members of various institutes of teacher training and educational sciences (IKIP). In essence,

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participants are those who are involved daily in research activities or various aspects of educational research activities.

The objectives of this training are:

To improve the abilities of the research staff in the framework of:

(1) Increasing the quality and quantity of educational and cultural research in education at the regional level oriented towards educational and cultural planning; and

(2) Supervising and developing the educational and cultural research network which comprises the entire Indonesian territory.

All training activities include:

(a) Lectures on theory, and the preparation of research designs and the development of data-collection instruments in the first five months;

(b) The next one and a half months are spent on data collection or field work; and

(c) The last one and a half months are spent on analyzing and report-writing.

The courses covers, therefore, research design; statistics and analysis; testing, measurement and evaluation; educational psychology; secondary data analysis; computer programming; English; and research project management.

The tutors for these courses are those who have experience in the fields mentioned above, namely IKIP lecturers and lecturers of other higher education institutes, officials of the Office of Educational and Cultural Research and Development and foreign consultants (technical assistance), who have been specially invited for this purpose.

2. Graduate Programme in Educational Research

This graduate programme admitted students for the first time in 1981 and the entire programme takes two years. The objectives of the programme include the expectation that graduates will obtain the ability to:

(1) Give lectures on educational research at IKIPs; and

(2) Carry out research independently.

The intention of this graduate programme is to provide training in educational research and evaluation oriented toward educational planning.

Besides lectures on research methodology, and thesis requirements, others include research design, field work and data analysis. Candidates are also given lectures on subjects related to education. Among them are: educational policy, economics of education, history and comparative education, child development, philosophy of education. But this programme has still to be developed further. Since it is oriented toward planning, it is necessary to involve experts other than those in the field of education to develop it, particulalry those whose knowledge and expertise need to be taken into account in educational planning, policy studies, economics, sociology, child development and so on. The development of this

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programme now, and in the future, needs to be a joint effort, therefore, between education experts and experts outside the field of education. The aim is the development of a graduate programme in educational research and evaluation oriented toward planning.

Typical Projects in the 1980s Carried Out by the Research Centre

To give a more practical view of the types of research activities in which the Research Centre of BP3K is now engaged, I have chosen three characteristic projects for more detailed treatment.

Case Study 1: Evaluation of Bahasa Indonesia as a Subject Area at the Primary School

Background and Issue

The findings of the Grade Six survey at the primary level, carried out in 1975, have revealed the disparity which occurs inmastery of primary school curriculum in different provinces. The primary pupils of municipality of Jakarta, the capital of Indonesia, achieve the most effective mastery whereas other provinces are lower in their achievement. Hence, the mastery of the curriculum achieved varies from one province to the other.

Bahasa Indonesia, as the national language, is taught from Grade 1 of primary school; it is the medium of instruction from Grade 3 primary school up to the highest level at the university. As a national language, a pupil's level of mastery of the language is expected not to differ much between one province and the other since it is the national language, and the level of the pupils' mastery must be improved from year to year. As a national language this subject is also expected to improve a sense of Indonesian identity and to foster the country's cultural development. To promote development in this way, it is desirable that the factors which cause the disparities mentioned above be clarified so that we can identify what activities should be carried out to overcome them. To answer these questions, the Research Centre of the Office of Educational and Cultural Research and Development has started an activity called "The evaluation of Bahasa Indonesia as a subject area at the primary school", since 1980/1981.

Objectives

From the point of view of cognitive development this activity aims to equalize and improve the pupils' mastery level in Bahasa Indonesia. It assumes that primary school graduates should have mastered the curriculum material set out. Bahasa Indonesia in particular, is expected to mould human beings with an Indonesian personality, the characteristics of which are stated in the primary school curriculum materials. Our project intends to study the positive effect of the

instructional pattern of Bahasa Indonesia on foreign language instruction.

Another objective, which is an additional one, is to improve the quality of researchers in various units outside the Research Centre. We believe this to be very important as we take into account the diversity of the Indonesian nation and the large number of issues to be studied, at a time when the quantity as well as the quality of researchers in the Department of Education and Culture is still limited. An improvement in quality can be achieved, we believe, by making other units participate in carrying out research activities.

Evaluation Methods

During the first phase, 1980/1981, data collection on the learning process of Bahasa Indonesia in Grade 5 was administered and this data will be used as a base-line. The specific data collected relate to the pupils' masterry level, curriculum targets, teaching and learning process, the usage of Bahasa Indonesia in and outside the class.

In the second phase, which is the experimental phase, a group of schools have been given guide books which contain instruction on how to administer the teaching and learning process of Bahasa Indonesia. This guide book was composed by a special team and it is intended to promote an effective and efficient teaching and learning process that will meet the cognitive as well as non-cognitive objectives mentioned above. This experimental phase will last only one academic year from August 1981 to May 1982.

The last phase will be conducted during the academic year 1982/83, when the primary school graduates concerned will be observed during their first year at secondary school where foreign languages are taught for the first time. In this phase, the level of mastery of a foreign language achieved by those students who used the guide book of 1981/82 will be compared with that of the students not using the guide book.

The sample used in this activity has been limited to twelve schools, six as control and the other six as experimental schools. These schools are in the municipality of Jakarta and in Central Java Province, and were chosen purposively. The instruments used in this study are as follows:

(1) Achievement tests of Indonesia used as pre- and post-tests;
(2) A questionnaire on attitudes toward Bahasa Indonesia and a questionnaire measuring aspects of the Indonesian personality relevant to the primary school curriculum;
(3) Student and teacher questionnaires asking for their background;
(4) Observation schedules on the teaching and learning process in Bahasa Indonesia and another on the usage of Bahasa Indonesia; and
(5) Interview schedules for teachers and library staff.

The techniques used to analyze the data will be descriptive but multiple-regression analyses will be carried out to clarify the relationship of achievement in

Bahasa Indonesia with the other independent variables.

Execution of the Activities

As stated in the objectives, it is impossible for the Research Centre of BP3K to administer even this smallish study entirely by itself. Consequently, this activity is being carried out by the Research Centre of BP3K in collaboration with the Research Institution of an IKIP (Institute of Teacher Training and Educational Science), at Semarang (Central Java). The team will hold meetings regularly at times favourable to both sides; IKIP Semarang for instance will get additional skills, whereas the Research Centre will get staff aid from IKIP Semarang.

Expected Outputs

It is expected that the outcomes will include:

(1) Recommendations on administering the teaching and learning process of Bahasa Indonesia which will help:
   —to improve the curriculum targets and the pupils mastery levels;
   —to mould the Indonesian personality relevant to the objectives stated in the primary school curriculum; and
   —to assist pupils to study foreign languages at the secondary level of education.

(2) Skill improvement in research at various units outside the Research Centre of BP3K, and especially at IKIP Semarang.

Case Study 2: Education and the World of Work

Another of the activities being carried out by BP3K is a study related to a very significant educational issue, namely the balance between vocational and general education. The findings of this project are intended to compare the graduates of vocational schools with those of the general schools in seeking answers to the following questions:

1) Should vocational, and especially technical education, continue to be provided either partly or wholly by the Department of Education and Culture ?
2) Assuming that it is provided by the Department of Education and Culture, should it be primarily a general education with emphasis on sound principles and less on specific technical skills, or should it emphasize the acquisition of specific technical skills ?
3) Should the vocational education be provided by separate vocational schools rather than vocationally-oriented courses in general schools ?

There are already several alternative ways in which such technical training can be provided, namely through:

(1) Formal vocational courses in general schools;
(2) Separate vocational schools;

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(3) Apprenticeship programmes;
(4) Special training programmes outside the regular school system, provided by the state;
(5) Formal training programmes or industrial programmes run by individual firms which are also available for other firms, rather than vocationally-oriented courses in general schools; and
(6) Different programmes on the job which are carried out without state support.

This study outlined here is longitudinal, and will take three years. It began in 1976 by tracing school leavers from different kinds of high schools. This tracing started when the students were in their senior classes and continued during the first and the second year after leaving school. From this study we expect to get a description of their early working experience. We hope to see whether there is some correlation between school-type and school quality, and the time taken in obtaining a job and its suitability. But in addition we will also obtain the proportion of the graduates who pursue their studies to higher education, as well as the proportion of the graduates who are still unemployed after leaving school for two years. To provide more information about graduates who have succeeded in getting job, the study is not only concerned with school leavers but also with world of work which employs them. The latter is at its implementation stage, and its result will be known in 1982.

It should be noted that according to international experience, the most technologically advanced industries tend to recruit candidates with strong backgrounds in mathematics, language and general subjects and train them in specific technology that fits their needs. Industries based upon middle-level technology or those equipped for less advanced technology are likely to be in a process of a fairly rapid change. In the meanwhile, vocational or technical school graduates working for such industries are usually familiar with the machines and equipment used in schools, which have generally not changed to keep up with the most up-to-date ones. Low technology industries may be interested in employing vocational school graduates, especially those coming from technical schools, but they are usually too expensive for them.

Case Study 3: Study of Teaching Staff Development Policies and Steps

It is widely recognized that the teaching staff is of the most influential factor involved in the development of education in terms of quality, relevancy, efficiency and effectiveness. Based on that assumption, most countries endeavour to create programmes to foster the development of teaching staff within the broad forward movement of the educational system itself. At the present time, the issue of programmes for the in-service training of teaching staff in Indonesia is a complex one. In several regions, there is a shortage of teaching staff in certain subjects, such

as mathematics, science and English. On the other hand, the recruiting of full-time teachers is often not synchronized well with the enrolment trends. For instance at the General Junior Secondary School (SMP) there has been an increase of 5,074 teachers, whereas the increase of students in 1974 up to 1976 reached 419,545 at the General Junior Secondary School and 82,000 at the General Senior Secondary School. This lack of synchronization becomes more significant because within these numbers there are teachers who have retired, died and changed jobs. It can also be seen in the distribution of subject teachers. The shortage of teachers is not only due to the procedure of recruitment, but it is also due to the teacher training institutions which have not produced the types of teachers needed. In terms of their standard of formal qualifications there are also many teachers whose status is still that of junior teachers, because they do not have the qualification needed for higher positions. For instance, 398,393 out of 637,947 primary schools teachers in Indonesia meet the standard of formal qualification required; 146,656 partially meet this standard and 92,989 not meet this qualification standard. These issues are only some examples of the questions encountered in the project on teaching staff which is mainly concerned with teacher supply, and covers:

1) The implementation of teacher supply and pre-service training;
2) Recruitment and placement; and
3) Job improvement and maintenance, both for its welfare and professional purposes (in-service training and career development).

Since the first Five-Year Development Plan, a special effort and policy has been formulated and implemented in order to cope with these complex issues of teacher supply, and both the system and programme concerned have always been subjected to research and innovation. The factors which make a system or programme change may arise from a conceptual change supported by research, or from new ideas that arise from pedagogical development and practical operations. It is a great pity however that the units or institutions which handle these activities often operate the policy separately in each unit or implementation agency, with their own methods and basic job execution systems. Hence, they are often tied to the objectives of their main unit and are unable to reflect on the overall aim, or on elements that have not supported the achievement of the goal. The upgrading programme for teachers, for example, which is one of the main efforts involved in improving the quality of teachers, has been administered in Indonesia by different units, each of which follows a different curriculum. To cope with the problem, activities or efforts leading toward a more integrated programme, directly pertinent to the solution of the issue, are being developed.

Despite these various efforts, no study has yet been undertaken in Indonesia which documents and records the various activities done by each unit. Accordingly the Office of Educational and Cultural Research and Development (BP3K) is now attempting to review the entire policy and aspects of teacher development activities done by several units within the Department of Education and Culture. With the

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findings, BP3K hopes to be able to give information to the decision-makers that will define a national policy on teaching staff development as a whole, and as an integrated effort. The issues which are the major concern on this study are:

(1) What kinds of policy have been determined by the Government in relation to overcoming the teaching staff problems quantitatively and qualitatively?

(2) What kind of policies and steps have been determined and implemented by units or institutions, within the Department of Education and Culture, pertinent to the solution of teaching staff issues, quantitatively and qualitatively?

(3) What policies and steps have been determined by each unit in cooperation with the other units ? Are they integrated or linked together? If ther are any, to what extent are they integrated or linked together?

(4) What basic principles are used in determining the policies and steps by the units in order to overcome the teaching staff issue, quantitatively and qualitatively?

(5) What kinds of researches have been done, pertinent to the solution of teaching staff issues, quantitatively or qualitatively ? Then what kinds of research have been used as bases in preparing a policy ?

(6) What kinds of policies and steps have been implemented in order to direct teacher training institutions as an integrated system ?

The methods being used for collecting the data for this study are, first, collecting the documents/reports on policy making and steps pertinent to the solution of teachers issues, quantitatively and qualitatively, that come from all units involved. Second, interviews have been carried out with officials deeply involved in activities and especially in formulating policy to get clearer and complete information.

Due to the complexity of the issue encountered, the activities of this study will be divided into two phases. The first phase covers the years 1981/1982, and its activity is collecting and studying documents and reports. The next phase covers 1982/1983 which is the analyzing phase, and the overall study of the documents obtained.

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Section Five

PROSPECTS FOR INTERNATIONAL COLLABORATION

SYSTEMATIC TRAINING PROGRAMMES IN SOUTHEAST ASIA
—RECSAM's Experience—

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Introduction

The Regional Centre for Education in Science and Mathematics (RECSAM) is one of the six Regional Centres (Projects) of the Southeast Asian Ministers of Education Organization(SEAMEO). It was established in 1967 and is located in Glugor, Penang, Malaysia. The Government of Malaysia acts as the host for the Centre as a contribution toward regional cooperation.

The major role of the Centre is to assist the eight member countries of the organization (Indonesia, Kampuchea, Laos, Malaysia, Philippines, Singapore, Thailand and Vietnam) to improve their teaching of science and mathematics in order to provide foundation for meeting the need for technically and scientifically trained manpower that is required for the national development within the region. The Centre's main activities may be summarized as follows:

1) To conduct inservice courses for key educators of member countries.

The Centre is responsible for training a total of 180 key educators each year. Each calender year is made up of 4 quarters and within each quarter 3-4 courses are offered, each of which is of 10 weeks' duration. All the courses may be classified under the following headings:

(1) Those related to upgrading teachers' skills in the management of teaching and learning;
(2) Courses for development and production of teaching-learning modules and other forms of teaching-learning materials including low-cost apparatus;
(3) Courses on different aspects of evaluation; and
(4) Action-oriented research courses, two for each year.

2) To implement project activities which would provide useful information for the improvement of course activities.

The following project activities have been completed:

(1) The Southeast Asian Science and Mathematics Experiment (1973-1980);
(2) The Concept Learning Project in Primary Science and Mathematics (1973-198J);

(3) Development of Consumer and Vocational Mathematics Materials (1979);

(4) Development of Self-Learning Modules for Science Teacher Education (1979); and

(5) Development of Instructional Materials and Method for Teaching Basic Science Applied to Food Preservation.

Currently the Centre is in the process of launching another project entitled 'Improvement of Science Teaching in Schools'. The project is to be sponsored by the Federal Republic of Germany.

3) To provide information services to member countries.

This includes dissemination of all RECSAM publications as well as maintaining information exchange and contact with educational institutions within and outside Southeast Asia.

4) To organize and conduct seminars, workshops and conferences.

5) To provide consultancy and other forms of special services to member countries, upon request.

Research Activities

It has been indicated already that the primary responsibility of RECSAM is to conduct inservice courses for the purpose of improving the teaching and learning of science and mathematics in the elementary and secondary schools within Southeast Asia. Research activities are therefore not one of the top priorities of the organization. This means that RECSAM does not always give attention to research in the manner that a research specialist may consider desirable. In fact it has trained personnel from member countries of SEAMEO to conduct several short-term, developmental and *qualitative* research activities for its own immediate consumption either through projects, and their related courses, or through other courses involving designs and development of teaching-learning modules/materials, or strategies and methods of improving classroom communication and learning or for the development and production of proto-type low-cost apparatus.

In Southeast Asia, there appears to be a large gap between the conceived philosophical values of education and the operation values of education through which implementation takes place. In the former the nature of the child in the educative process is regarded to be an important indicator for curriculum development and implementation, but the latter seems to more often emphasize conformity. This situation is especially true in the case of science and mathematics education in which RECSAM is most active in exercising its responsibilities.

This situation is especially important to RECSAM since its main objective is to attempt to bridge the gap between the two contrasting values of education. The thrust of the elements of research it promotes attempt to bring about changes in the practice of education in the classroom for the advantage of the child. The whole

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intention of this research is thus to collect as much information or feedback data as possible so that this may be analyzed and utilized directly during inservice courses held at the Centre.

Research activities at RECSAM started with the interest expressed in member countries of SEAMEO in the developmental theory advanced by Piaget about *how* children acquire knowledge or, even more important, *how* the theory could be applied to classroom situations. By late sixties, the educationists in the region were beginning to question whether the curricula in science and mathematics used in the schools of their respective countries matched the new developmental conception of the child and if not, what steps could be taken to remedy the situation.

Coupled with the new conception of the child, a few years later, there emerged an influx of more up-to-date science and mathematics curricular materials brought in mainly from the USA and Great Britain. These new curricular materials appeared to have been prepared on the basis of meeting the developmental needs, capabilities and interests of the young and therefore, appeared to be much more viable and suitable for the child. The material prepared by the Elementary Science Study Group, often referred to as the ESS materials, is one such an example.

Thus, partly against these materials, and partly due on the new dimension of knowledge about the child, educationists in the SEAMEO region began to perceive that the science and mathematics curricula in their schools was not soundly articulated to the common features of a child's thinking and learning. As a result, research into ways of finding more suitable, viable and indigenous curricula became inevitable. The University of the Philippines Science Education Center (UPSEC), the Educational Development Projects Implementing Task Force (EDPITAF) of the Philippines, the Curriculum Development Centre (CDC) in Kuala Lumpur, Malaysia and the Institute for the Promotion of Teaching Science and Technology (IPST) in Bangkok, Thailand are all examples of centres which have been busy and are still busy, with heavy responsibilities for the development of curricula, curricular materials and low-cost science and mathematics apparatus which have arisen from these changing needs.

At about this period of time, it was suggested that RECSAM should assist member countries of SEAMEO to conduct research courses for key educators so that the skills learnt could be utilized for a similar purpose upon return to their respective member countries. It was then conceived that the Centre should develop two projects with two inservice courses attached to each project. The two projects were as follows:

1) The Southeast Asia Science and Mathematics Experiment (SEASAME) from 1973-1980; and
2) The Concept Learning Project in Primary Science and Mathematics (CLP) from 1973-1980.

The first project dealt with the development of teaching-learning materials in

Science and Mathematics for elementary schools while the second was concerned with developmental psychology related to the child's thought processes in dealing with science and mathematics concepts.

Research Plan and Implementation

Now, I should like to explain very briefly the plan and implementation procedure of the first project, namely, 'The Southeast Asia Science and Mathematics Experiment'. This project had a two-fold objective:

(1) To provide first-hand experience for key educators from the SEAMEO region in the design, development and production of prototype curriculum materials or modules in elementary science and mathematics suitable for utilization in the countries; and

(2) To provide first-hand experience for the key educators in the tryout and evaluation of the modules in some selected urban and rural schools both in Penang and in their own countries.

Under this project a total of 27 volumes of teaching-learning modules completed with evaluation instruments had been developed, 14 for science and 13 for mathematics. The content of all the volumes reflect the effort made by key educators themselves under the guidance of their course supervisors, other members of the staff of RECSAM and the invited external specialists. Given below is the sequence of development of training provided for the key educators:

Module Development Group—16 Key Educators

Stage 1 Exposure to principles, strategies and methods of module writing. Examinations of exemplar modules produced elsewhere.

Stage 2 Key educators working in small groups of 4 each identified module topics. Each group was under the supervision of a tutor. They were supervised in their reading and discussions.

Stage 3 They then developed module outlines and later filled them up with details. The modules were then tried out in Penang with specific age groups intended. This was a mini tryout with about 10 children.

Stage 4 Revision of the first tryout based on feedbacks. There followed a second try out with further modifications, where necessary.

Stage 5 Further tryouts were done in the key educators' home countries. In this tryout, where necessary, translated versions of the modules in appropriate native languages were used.

Stage 6 Feedbacks from Stage 5 were reported back to RECSAM for further modification, if necessary.

Stage 7 A final version is being produced for distribution to member countries through their Ministries of Education.

Module Evaluation Group—16 Key Educators

Stage 1 Exposure to principles and techniques of evaluation.

Stage 2 Key educators working in small groups of 4 each examined some exemplar

evaluation instruments developed elsewhere, in the areas of cognitive, affective and psychomotor domains. They were supervised in their reading and discussions. Each group was being supervised by a tutor.

Stage 3 By this time the Module Development Group would be ready with their first tryout materials. Each evaluation group helped to develop instruments for testing of only one module. Feedbacks were collected, analyzed and the test items were then refined.

Stage 4 Similar steps were taken for subsequent tryouts.

The second project, which is perhaps more interesting and useful since the result obtained is applicable to a number of other countries, is 'The Concept Learning Project in Primary Science and Mathematics'. The objectives of the Project were as follows:

(1) To investigate how elementary school children in Southeast Asia learn science and mathematics concepts;

(2) To provide on the job training for key educators from the region in the development and country tryout of instruments developed during the course at RECSAM; and

(3) To provide suggestions for improving teaching-learning strategies and the development of curriculum materials so that they would match the thinking levels and thinking styles of children.

Two related courses of training had been assigned to this project, one for elementary science and the other for elementary mathematics. The total number of key educators selected for each group was 8. Given below is the sequence of development of training provided for the key educators:

Stage 1 Both groups, particularly during the earlier parts of their courses, were taken together. They were exposed to Piaget's model of cognitive development with emphasis on operational learning stages and apparent behaviour of the child. In the main, the exposure covered all the three main stages, pre-operational, concrete operational and formal operational stages of development and learning. Experience with local children/pupils taken from schools in Penang were provided at RECSAM.

Stage 2 The key educators were taught to use clinical and group methods of investigation using ready-made instruments adapted from the established procedures as found in the original Piaget's experiments with children. The educators were supervised by a team of tutors including 2 visiting specialists, one from Great Britain and the other from Australia. They learned to administer protocols, record pupils' responses, analyze and interpret results.

Stage 3 The educators were later taught to develop instruments on their own or to adapt instruments already developed by others and to use the instruments for analyzing children's understanding in certain curricular topics.

Stage 4 Based on the feedback of the first tryout, the instruments were then revised. Subsequent tryout followed and further revisions were made, where necessary. The final versions were made available in the native languages needed for individual country tryouts. Feedback of the country tryouts were submitted to

RECSAM for final analysis and preparation of final reports.

Stage 5 Final reports were printed and distributed to member countries through their respective ministries of education.

It is to be noted that RECSAM has found that the result of this experiment was useful for improving its training activities in other courses of related interests, e.g. in courses involving development of teaching-learning materials for primary mathematics and science or in involving strategies of teaching and learning science and mathematics. Exemplar instruments, one on 'An Investigation into Children's Thinking About Heat Transfer' and another on 'A Brief Investigation on Solving Equations' are available for distribution. A brief analysis on each of them has also been provided.

The Regional Workshop on 'Science and Mathematics Concept Development in Southeast Asia' held at the Centre from 18-29 August 1980 was well received by member countries of SEAMEO. The workshop recommended a number of usefull areas for research. Details of these recommendations are printed below.

Recommendations of the Regional Workshop

Following the presentation of working papers, the conference divided into three groups: Research, Curriculum Development, and Teacher Training to discuss the issues arising from each area.

The emphasis was on research needs in each of three areas. Research currently considered to be of importance in the west had been addressed in the given papers and naturally influenced the direction of the discussions. The research issues reported were overwhelmingly concerned with reasons why children do not succeed at science and mathematics, at the level considered desirable in a world which increasingly needs literacy in these subjects. There appears to be a mismatch between the cognitive development of the child and the curriculum presented to him. Teachers are very slow to change and research findings have had little impact on curriculum, teaching methods or teacher attitudes.

The mismatch implies that work must be done on sequencing of topics in mathematics and science. A starting point might be to take into account the apparent logical development of the disciplines. In addition, some method must be found to assess the capability of the child for assimilating the material, whether this is tied to age, the store of information he already has or the retention span he possesses. The final problem is to ascertain link between these two aspects, e.g. which science or mathematics topic is suitable for a particular stage of development. Suitability may be judged on the effectiveness of learning that takes place; i.e. learning which is retained and can be regarded as evidence of concept formation rather than short-term memory recall.

Children do not arrive at school as 'empty vessels'. They already have intuitions and ideas (some of which do not correspond with adult

conceptualizations). These ideas must not only form the basis on which we build education; we must also be aware that these misconceptions may be barriers to learning, particularly in science. The only way we can find out what children think or how they adapt what we teach, is to talk to them rather than judge their thought processes solely on their ability to repeat information we have given them.

Research findings have considerable implications for teacher-training. Traditional methods of training teachers have taken little account of the feelings and attitudes of the learner. Teachers already in the schools must also be helped to become aware of what is new in the field. Dissemination of research and its implications is of paramount importance. Trainers of teachers are likely to be involved in education research and thus need training courses themselves.

These were some of the many issues raised during the workshop sessions. Following the deliberations of the three groups, plenary sessions provided opportunity for drawing ideas together. A guiding principle was the desire for a *practicable* set of guidelines for research and the implementation of research findings. Some of the recommendations are new. This is to be expected. What is new and most encouraging, is the emergence of such unanimous agreement from an international educational forum. We may feel confident that the workshop has laid a firm foundation for a concerted programme of research in Southeast Asian region in the recommendations which follow. In keeping with the practical orientation of discussions, the question of implementation was not neglected.

These research recommendations are synthesized from those given by the three working groups: Research, Curriculum Development, and Teacher Training. An implementation model and some specific research implementation description are presented.

Recommendations for Research

1) Functioning of children in different learning contexts:
   (a) Present status of children's understanding of science and mathematics concepts (content based).
   (b) Children's attitudes toward particular topics in science and mathematics.
   (c) Relationship between 'school taught' concepts and possible basic pre-requisite developmental concepts.
   (d) Cultural, environmental and socio-economic factors that affect the learning of science and mathematics concepts, e.g. children's motivation in science and mathematics.
   (e) Use and effect of indigenous materials and contexts on children's understanding of and attitude to science and mathematics concepts.
2) Collecting data on other concepts where no information is available in the country (Piagetian and other models):
   (a) Present the same task to children of different ages (cross-sectional).

(b) Present the same task to the same children at different times (longitudinal).
(c) Have association and cross-matching between concepts.

3) Assessing pupils' understanding of science and mathematics concepts through different methods and instrumentation, such as:
   (a) open-ended questions;
   (b) written tests which demand greater reasoning on the part of pupils (eatablishment of item bank and parallel validation);
   (c) observation methods (group or individual);
   (d) situations which assess developmental level;
   (e) methods of diagnosis.
4) Sequencing of materials to match the developmental level of the child:
   (a) Identify parts of our curriculum which are:
      (1) difficult to teach—by asking teachers; and
      (2) difficult for children to learn—by asking children and teachers.
   (b) Sequence the topic according to the needs of the subject and test children to find the match between the topic and children's understanding.
   (c) Find the nature of difficulties and analyze with respect to concepts and skills necessary for success.
   (d) Write materials and invent experiences which reflect the results of the three above tasks (a) to (c) and try these out.
   (e) Assess success not only immediately but also after a period of time.
5) Trying out effective teaching strategies relevant to particular mathematics/science concepts:
   (a) motivation techniques;
   (b) questioning techniques;
   (c) expositional techniques;
   (d) flexibility in organizing learning activities;
   (e) linking mathematics and science;
   (f) feedback and evaluation;
   (g) comparative studies of different teaching methods.
6) Identifying status and methods of improving teachers' understanding of and attitudes toward science and mathematics concepts.
7) Determining the relationship between teachers' understanding of mathematics and science concepts and pupils' achievement of these concepts.
8) Relating teachers' intention and pupils' learning outcome through:
   (a) teachers' ability to specify objectives;
   (b) observation techniques;
   (c) ways on how the child solves his problem.

Implications and Implementation of Research Findings

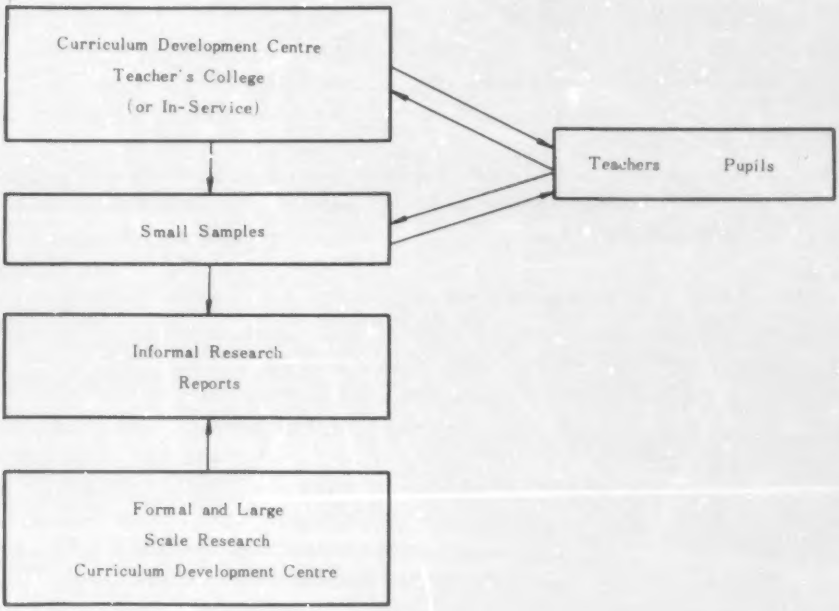
The following reflect an awareness of need among educators for an increased

sensitivity towards children's learning problems and their ways of thinking:

1) Prepare and tryout teaching/learning materials to match sequence of the subject and the level of the children. This is a long process which involves interpretations of research into practice.
2) Introduce theories of cognitive development through teaching applications in pre- and in-service education programmes. The teacher-trainee should be aware of the implication of these cognitive developmental theories in their respective areas.
3) Disseminate research findings in appropriate forms to teachers, curriculum developers, teacher-trainees and administrators. Teacher-trainees may be more receptive to these researches if they are provided with the opportunity to review some of the findings through direct experiences with children. Teachers should be encouraged to:
   (a) become members of professional associations;
   (b) update their knowledge by reading journals and other publications and to attend training courses: and
   (c) contribute to sharing of ideas relevant to research bodies concerned, particularly ministries of education and curriculum development centres to make greater effort to disseminate research findings to the consumers.
4) Train teacher-trainees to conduct practical classroom level research as part of their professional responsibilities. Such research although small scale should be of sufficient reliability and validity to contribute to the betterment of educational practice.
5) Re-orient teacher-trainees and teachers presently in school to acquire in-service programmes in the following areas:
   (a) improvement of the knowledge content and developmental psychology;
   (b) methodology and strategies of teaching which will match with the needs of the child; and
   (c) assessment procedures related to concept acquisition.
6) Develop curricular and instructional materials in keeping with relevant research findings in all stages of curriculum development, e.g.:
   (a) development;
   (b) trials; and
   (c) revision.

A possible model for the implementation of small and large scale research, together with samples are presented in next page.

A Model for Implementation of Small and Large Scale Research



IDENTIFYING INTERNATIONAL CONTRIBUTIONS TO TRAINING
—The New Zealand Experience—

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A Changing Community: Knowledge for Whom ?

Educational research rarely prospers in a political or social vacuum. To greater extent that is obvious in medical or scientific research, the type of social or educational research a nation chooses to foster is usually a reflection of its current problems and preoccupations, the things that matter to its influential groups, the facts that are needed to justify decisions about policies or programmes. It follows then that those who are recruited and employed for these tasks only rarely stand apart from the prevailing intellectual values which are paramount in a particular place at a particular time. Their mission however, is to cultivate knowledge of universal interest and the purpose of this essay is to invite comment on whether the smaller nations of the world, and especially those of the Asian and Pacific region, should accept a distinctive and timely responsibility for internationalizing the training of educational research workers.

Viewed from the vast expanse of Oceania, New Zealand is a small and remote land, a favoured nation of promise and plenty, still shedding a colonial past, striving a little more self-consciously, now to blend two cultural traditions, one originating from Europe, the other from Polynesia. As it enters upon a new decade, it finds its widely-acclaimed social harmony a little unsettled by a more turbulent world, dramatic new technologies, and new pressures for social change.

The first deliberate and conscious efforts to promote educational research in New Zealand began just 60 years ago, in both universities and in goverment department. From the outset these included modest provisions for sending individuals abroad for advanced training in research. Out of these beginnings in the 1920s, the sense of horizon that developed was sufficient to produce a positive response, a decade later, when an opportunity came from the Carnegie Corporation of New York to establish a national body to promote research and development —the New Zealand Council for Educational Research (NZCER). It is of interest, perhaps, that the Corporation agreed to finance this proposal at a time when the world was trying to cope with a severe economic depression. A decade later, at the conclusion of a terrible war, New Zealand became one of the first nations to provide a legislative framework for research and development. The parliamentary

provision which guarantees the autonomy of NZCER is indeed a simple and visionary piece of legislation. It imposes no restraint, for example, on the organization's freedom to promote research and development internationally.

The expansion in research activity which has since taken place, specially in the last 15 years or so, is similar in scale and diversity to that which has occurred in other prosperous nations. There has been a welcome broadening both in the sources of sponsorship and publication, and also in the organizations, statutory bodies and professional associations interested in the utilization of research knowledge and skills. The research community has also become more alert to international influences, expanded opportunities for scholarly exchange, or international collaboration, and the marvels of electronic technology which provide access to the world-wide stocks of research information. Whether the liveliness, scale or aptness of all this research activity in New Zealand is more or less than that which occurs in nations of similar size, Norway, Hong Kong or Singapore, is hard to say. Without doubt the total quantum of knowledge produced each year would be small when compared with that of Japan, or India or the USA

As elsewhere, one should readily admit however, that the high hopes about research which abounded a decade ago have been subdued a little recently in New Zealand. They could be curtailed even more in the immediate future. The mood of nervousness that exists at present arises from economic uncertainty, demographic contraction and social tensions within the client community. We openly confess that we have been no more successful than others in ensuring that the increased volume and diversity of research in the past decade has been matched by a corresponding improvement in its quality and relevance. In my judgement, however, there is still sufficient resilience in the public standing which educational research enjoys in New Zealand for it to withstand these ills as transitory ailments. One may therefore confidently expect educational research in this distant country to continue to occupy a valued position, leaner, a little more feminine perhaps, and with greater sensitivity to cultural diversity.

By and large, in recent years educational research in New Zealand has been pre-occupied with the established concerns of the education system, curriculum evaluation, behaviour analysis, guidance and counselling or child development, reading, special education and so on. As an element in a broad social policy there has been no clearly defined and concerted efforts so far to recruit and train research personnel for a particular set of purposes in implementing national objectives or priorities in education. Indeed, few have yet spoken out on the need for more coherent career prospects for educational research workers. It is possible, but not probable that the steps taken recently to identify social scientists as members of the scientific workforce employed by government in many agencies and department, will hasten the day when such questions are faced.

Organizationally, there are now three major contexts through which educational research is at present sponsored, financed, managed or disseminated in

New Zealand. Given a small country, with good communications, it is not surprising that a considerable measure of collaboration occurs between each of these three contexts, as well as among the client agencies who seek their services, and the 3,000 schools which collaborate generously in much of the research undertaken.

First, the New Zealand Department of Education (i.e. the Ministry) retains a research staff of its own, who undertake national and international research or statistical surveys dealing mainly with policy issues, demographic projections, curriculum development and programme evaluation. In addition, the Department normally supervises about 40 research contracts in any year for research undertaken in universities, teachers colleges, NZCER and other agencies.

Secondly, the New Zealand Council for Educational Research, now financed by government grants, contracts and its own publishing activities, normally promotes about 50 investigations at any time which may be undertaken by its own staff or as sponsored projects. The Council also maintains extensive advisory, dissemination and publishing services, numerous associations with the teaching, administrative and intellectual communities, and a broad range of consultative activities in the South Pacific and Southeast Asia.[1]

Thirdly, the six universities of New Zealand all have departments or schools of education and their staffs and graduate students undertake a wide range of research, advisory, consultative and developmental activities, mainly within New Zealand. These contributions have been supplemented increasingly in the 1970s by the setting up of specialized centres or more coordinated programmes of research. They have also been supplemented by a modest expansion of research in teachers colleges, technical institutes and several professional bodies.

The Conventional Pattern of Training

The research workforce employed in the field of education in New Zealand is not large, and only a small proportion of its members hold full-time, relatively permanent positions. If plans for doubling or trebling this workforce that were advocated in the early 1970s had been implemented, the total number of people involved would still not have exceeded the normal, full-time staff establishment of several of the leading research institutes of Asia. There is nothing especially unusual about the recruitment, training and employment of this research workforce, but it may be helpful to examine its development under three headings:

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1. See for example: I.D. Livingstone, Christina Mangindaan and Robert K. Sembiring, *National Assessment of the Quality of Indonesian Education: Survey of Grade 9*, BP3K and NZCER Joint Report, Jakarta and Wellington, 1978.
R.A. Benton, "The Philippine Bilingual Education Programme: Education for the Masses or the Preparation of a New Elite", in the *Philippine Journal of Linguistics*, Vol.11, No.2, December, 1980.

(1) The contribution made by universities in the past 60 years through their provisions for advanced degrees and their efforts in creating a receptive attitude toward research among teachers;
(2) The importance of advanced training outside New Zealand for those who have risen to positions of research leadership, and in creating a cosmopolitan emphasis within university departments; and
(3) The flexibility that is required in recruiting trained research people, in creating fellowship or internship programmes, attracting specialists from other field and in fostering support services to ensure that fresh knowledge is disseminated effectively.

Contribution of the Universities

While the training for educational research offered by the universities of New Zealand may not be distinctive, it is, in my judgement, both sound and broad. As elsewhere, the common pattern is for potential recruits to take graduate courses in a university department or a school of education, proceeding usually to a masters' degree and increasingly to a doctorate. The content of the courses taken in preparation varies somewhat. Generally speaking, prior studies will have included a broadly-based bachelors' degree in which liberal subjects (likely philosophy or sociology) have been balanced with successive stages of professional subjects (comparative education, educational psychology, guidance or counselling, educational measurement, etc.). Degrees of this kind also form the basic academic training of those entering many other specialist positions within the education service. In several universities, a small number of senior students with a special interest in research, will then add to these earlier courses, specialist studies of research methodology, advanced statistics, computer programming, experimental design replication and practical experiences with observational procedures, clinical case studies or field experience and so on.

The record of the universities in providing such training now goes back over 60 years and may be dated from the provisions made in 1920 for appointing the first professors of education. Steps toward clinical-type training, and the use of theses and dissertations as exercises in post-graduate training, followed immediately, and a sprinkling of the early graduates from these programmes have gone on to a life-time of scholarship. The most illustrative example from that generation would be C.E. Beeby. From initial studies in the early 1920s at Canterbury University College, Dr Beeby went on to doctoral studies at the University of Manchester in the United Kingdom and returned quickly to become the first director of an education and psychological laboratory in his old university. It is a telling testimony to scholarly longevity surely, that Dr Beeby has recently capped 50 years of service as our most distinguished scholar-administrator by writing an outstanding book on Indonesia's

massive exercise in educational research in the 1970s.[2]

All told more than 1,000 theses and dissertations on educational matters have been presented in New Zealand universities in the past half century. Many of us would claim however, that the large expenditure of time and effort which goes into producing an annual output of around 75 graduates, with fledgling capacities for research, continues to be under-valued. We have little systematic information on how they choose such specialist training, or their reactions to it, or about their subsequent careers. Only a small proportion will proceed to a more career-based commitment to research since most take up teaching or administrative positions. Still it is the reaction of this group each year that is the basis of the outstanding achievement of New Zealand universities, namely the fostering of a sympathetic and lively interest in research within the teaching profession. In some universities nowadays up to 10% of these graduates in education come from Southeast Asia and the South Pacific.

It has become more evident in New Zealand in recent years, that the patterning of investigations or staff publications and consultations into coordinated and cumulative programmes of research, with sophisticated opportunities for training, depends upon the presence of university teachers whose research commands international and national respect, enthusiastic cooperation from schools, and a capacity to attract supplementary funds. Even in a country as small as New Zealand, there is solid evidence to show that the most penetrating contributions originate cumulatively from research developed systematically over several years. To illustrate contributions which have stimulated improved knowledge, new practical aids, and more effective dissemination, we may these days cite such examples as Professor Marie Clay of the University of Auckland for research on early reading behaviour, Dr Warwick Elley, formerly of NZCER and now of the University of Canterbury for imaginative test development and research on assessment, Dr Richard Benton, formerly of the University of Honolulu, now of NZCER for research on socio-linguistics, Dr Ted Glynn of the University of Auckland on behaviour modification, and Dr Geraldine McDonald, also of NZCER, for research on early childhood education and the women's movement.

The rapid expansion of doctoral programmes in the past decade has helped to consolidate training programmes of this kind. Many would still claim, however,

2. See C.E.Beeby, *Assessment of Indonesian Education: A Guide in Planning*, Wellington, NZCER/CUP, 1979.
See also by the same author, *The Quality of Education in Developing Countries*, Cambridge, Mass., Harvard University Press, 1966; *Teachers, Teacher Education and Research, Prospects for the Eighties*, 50th Anniversary Lecture on Teacher Education in Developing Countries, University of London, 1978.
Gerard Guthrie, "Stages of Educational Development Revisited" and C.E. Beeby, "The Theses of Stages——Fourteen Years Later" in the *International Review of Education*, Vol. XXVI (1980), 451-474; J.M. Barrington, "The Teacher and Stages of Development", *British Journal of Teacher Education*, Vol. 6, No. 2, May 1980.

that provisions for long-term and field-based projects continue to be inadequate.[3] Staff members in university departments, other than education, have also been taking an increasing interest in educational questions; as research units, or contract teams have become established, a specialization of interest has begun to develop. Whatever the misgivings about the aptness of current PhD and Masters' programmes, it is fair to say, I believe, that graduates of the past decade in New Zealand have been obliged to concentrate to a greater depth on a more limited set of theoretical or professional issues, on more refined research procedures, and on a better search for crucial questions.

Advanced Training Beyond New Zealand

All told, about 20 New Zealanders might be numbered nowadays among those who have achieved a considerable international reputation in careers predominantly concerned with educational research. At least half of this small group continue to live outside New Zealand at leading academic centres in Europe or North America, or in international agencies of one kind or another, and a sprinkling has given the major part of their career to educational planning in Africa. Teaching and research experience in other countries has also been a critical phase however, in the careers and professional development of those who have returned to advance research in their homeland.

There is nothing exceptional about our educational research personnel in this respect. For many years, academic and cultural centres outside the country have attracted young New Zealanders; their movement has formed part of a steady international traffic of students, and scholars in and out of the country. We do not have precise information on migratory habits of graduates with research training in education but one broader follow-up study[4] has recently suggested that nearly half of the annual intake to university education will have studied or worked in other countries during the first half of their careers. About 1 in 5 of the graduating students in this survey had taken additional studies elsewhere, and about 1 in 8 had remained abroad, men and women in similar proportions. They are usually the individuals with the highest accomplishments, and doctorates clearly advance propsects for international mobility. We have no reason to assume that research workers in education are among those least likely to travel.

In any analysis of this kind however, it is wise to balance this loss of talent against the gains in experience for those returning home. In our case such a balancing needs to be supplemented too, with an appreciation of the stock of able

3. See E.L. Glynn, "The Training of Educational Research Workers", *New Zealand Journal of Educational Studies*, Vol. 14, Supplement, 1979.

4. See I.D. Livingstone's, *University Students on the Move*, NZCER Occasional Paper, 1981.

people from other countries who come to make their homes in New Zealand.[5] The more important outcome of these migratory habits in academia is that the institutions where training is offered are now more cosmopolitan than one might have expected in, given the remoteness of the country. Such international influences are much less in British these days than they used to be. In terms of academic values, attitudes or theoretical dispositions which affect educational research, they are no longer unduly restricted to the influence of a limited range of universities of the Northern Hemisphere. On the other hand, it is noticeable that the impact in the universities of teachers and research workers who have had an extensive experience of education in Asia, Africa or South America, is still very modest, if it can be said to exist.[6]

Generally, the welcome offered to graduate students from other countries continues to be friendly, and those from Southeast Asia and the South Pacific tend to be more numerous than those from Africa or other places. There is a reasonable prospect then, that students coming to New Zealand for graduate training will have opportunities for a multicultural experience that may be as valuable as the more technical training they receive. In other words, academic institutions in New Zealand which provide research training share some of the distinctive features to be found in other Pacific universities, in Fiji, Hawaii and Papua New Guinea. The other key advantage is the opportunity they offer for students to practice research skills in a setting where access to schools is relatively easy, and where the teaching profession welcomes participation in research.

We should acknowledge too, that New Zealand has benefitted in recent years from the opportunities its research personnel have had for employment with major international agencies, for service as consultants to other nations, and for participation in major international projects. The most comprehensive of these have been the IEA surveys of educational achievement. It may be worth noting then

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5. It may be of interest to note that the permanent migration rate for New Zealand students seems to be lower than for other countries such as Norway, or the Federal Republic of Germany for which data are available. See Scientists Abroad, *A Study of the International Movement of Persons in Science and Technology*, Paris, Unesco, 1971, p.20.

6. Over the past 20 years however, the number of diploma, masterate and doctoral theses presented in New Zealand universities on educational developments in Southeast Asian countries has steadily increased. A listing of these investigations may be obtained through the New Zealand Council for Educational Research, P.O. Box 3237, Wellington.
While a number of surveys have been undertaken about the adjustment of overseas students to their academic work and social life in New Zealand, there have been few systematic enquiries about their careers after they have returned to their homelands. For an interesting account of the impact of overseas experience in Asia and the Pacific on New Zealand youth, see Keren Clark, *The Two-Way Street: A Survey of Volunteer Service Abroad*, Wellington, NZCER, 1978.

that the current survey of achievement in mathematics in 26 nations, is being directed from Wellington. As readers will know, too, NZCER like NIER, has also become involved in recent years with a range of research-based consultancies in the Pacific and Southeast Asia. In a small and modest way, we have thus acquired a little experience in providing some training experience for research personnel from these countries.

Naturally, all these influences have a bearing upon the cosmopolitan emphasis achieved in the academic training of our own graduates, the textbooks or computers they use, the libray and information resources available to them, their opportunities to converse with or listen to leading scholars from other lands and so on. The steady expansion of conferences, seminars and workshops, advances in electronic technology and the marvels of mass media and rapid travel, have all meant that research scholars in far-away New Zealand are no longer quite so removed as they once were from the centres of intellectual excellence. We realize we still have much to learn however, about the values and aspirations of Asian nations.

Flexibility in Recruitment

Proposals for more coherent national programme for training educational research workers in New Zealand have begun to appear only in recent years, and steps toward their implementation have been very tentative.[7] There is undoubtedly still much scope for fellowships, internships and travel awards on a scale equivalent to several branches of science or medicine. Too often the appointment of project officers or graduate and teaching assistants in universities remains a chance harvest from contract funds. But most universities now have provisions for well-qualified teachers from secondary or primary schools to be awarded fellowships, so that they may undertake an investigation of personal interest while remaining on full salary. This form of sabbatical leave is widely welcomed by teachers, but it is not designed to produce career-research workers. Most recipients return to teaching, as is the intention.

One of the regrettable features of research training in New Zealand to date, is that a high proportion of senior students are obliged to undertake their initial thesis on a part-time basis, and without any significant reduction of their teaching responsibilities by the school where they are employed. In other words, it is more common than in other fields for graduate students in education to also be employed and this inhibits universities in organizing coordinated programmes under senior

7. Sample proposals may be found in Chapter 20, 'Research Training and Professional Development' in *Improving Learning and Teaching*, Report of a Working Party (Chairman, P. J. Lawrence) to the Educational Development Conference, 1974. Also, E. J. Glynn, "The Training of Educational Research Workers", *New Zealand Journal of Educational Studies*, Vol. 14, Supplement, 1979.

supervisors. As a result, few post-graduate students preparing or planning a thesis in New Zealand are provided with adequate opportunities for internships with scholarly organizations, administrative offices or research centres where they might associate with full-time staff continuously engaged on high quality work, or contribute to a wider programme, as well as meet colleagues of like mind.

Unfortunately too, on the completion of a thesis, little direct effort is made, outside the university context, to see that the graduate student follows up the introduction to research he or she has been receiving (by post-graduate or post-masters internships) at a recognized centre or neighbouring countries. The general absence of a 'developmental philosophy' toward prospective recruits may stem from the fact that only very exploratory steps have been taken so far, through specialized workshops and seminars, to upgrade the skills and understandings of older research workers who are already qualified.

It is regrettable too, that provisions are still meagre for prospective scholars with training in another area to transfer into educational research. Although the basic purpose of an annual research fellowship provided by NZCER for the last 20 years has been to extend field experience at the national level, it is worth noting that at least half of those granted this award have come from such disciplines as anthropology, linguistics, economics, mathematics and the arts. This very modest training programme has been based on the 'colleague' model, and it is intended to foster conceptual, design and political skills and a high proportion of the recipients have progressed from the fellowship to a scholarly career. There are of course numerous advantages for any research organization whose staff includes linguists and psychologists, sociologists and mathematicians if it is able to welcome younger specialists in such disciplines, as well as more eminent scholars from abroad with similar interests. Generally, our experience in the South Pacific and Southeast Asia has reinforced our concern at NZCER that the training institutions where new recruits serve their apprenticeship should not become too narrow in their focus. We believe that educational research prospers when vision and intellectual versatility create a context for sophisticated technical and analytical skill.

It is from such a background we envisage the advantages to be gained from incorporating some training apprenticeships in a limited number of major research projects rather than concentrating all training into the scheduled course requirements of universities. As it happens, my own organization has been particularly for the opportunities we have had to 'employ' research assistants from Southeast Asia on projects of an international character which we have been undertaking. But there have been other large-scale projects in New Zealand, such as the *Learning in Science Project*[8] at the Uuiversity of Waikato, the *Reading*

8. The major research papers and monographs from the *Learning in Science Project* have yet to appear. Interim papers are available from Professor P. S. Freyberg or Dr R. J. Osborne, Project Directors, University of Waikato, Hamilton, New Zealand.

Project at the University of Auckland[9], or NZCER's *Sociolinguistic Survey of Language Use in Maori Households*[10] which could have provided very distinctive training opportunities for scholars from outside New Zealand if this had been taken into account in planning them. In each of these cases too, the projects have already become known in major professional forums in Southeast Asia, and openings have thus existed for comment on their relevance as training contexts. A more precise recognition of such training opportunities in the future will require very much more regular communication and collaborative planning than we have so far enjoyed. But this is the essence of the spirit of the cooperation we foresee when we talk about the internationalizing of training for educational research in Asia and the Pacific.

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9. Marie M. Clay, *Reading: The Patterning of Complex Behaviour* (2nd edition), Auckland, Heineman, 1979; *The Early Detection of Reading Difficulties: A Diagnostic Survey of Reading Recovery Procedures*, Auckland, Heineman, 1979.
10. R. A. Benton, "The Role of Ethnic Languages in the Education of New Zealanders", *Delta 19*, 24-32; "Who Speaks Maori in New Zealand", *SET* No. 1, 1979; "The Maori Language in the Nineteen Seventies", *ANZAAS Congress*, 1979; *The Flight of the Amokura: Vernacular Languages and Formal Education in the Pacific*, Wellington, NZCER, 1981.